

31ST  
ANNUAL REPORT

ON THE

Health of St. Helens,

*For the Year ending January 2nd, 1904.*

BY

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AND

*Public Analyst.*



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# HEALTH COMMITTEE

OF THE

## ST. HELENS CORPORATION

### NOVEMBER, 1903.

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THE RIGHT WORSHIPFUL THE MAYOR, (ALDERMAN J. MASSEY, J.P.),  
Deputy-Chairman.

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„ F. J. BROWN.	„ P. J. O'KEEFE, L.R.C.P., L.R.C.S.
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## STATISTICAL SUMMARY FOR 1903.

POPULATION—Estimated to the middle of the year—

Males	...	45167	}	Total	...	87,385
Females	...	42218				

Natural increase during the year	...	...	...	1,886
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MARRIAGES	...	...	...	...	...	...	...	569
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Annual Rate of Persons Married per 1000 of the Population	...	6.51
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BIRTHS	...	...	Males	...	1,752	}	Total	...	3,421
			Females	...	1,669				

Annual Rate of Births per 1000 of Population	...	...	...	39.14
--	-----	-----	-----	-------

Mean	„	„	during years 1893 to 1902	...	...	37.64
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DEATHS	...	...	Males	...	830	}	Total	...	1,535
			Females	...	705				

Annual Rate of Mortality per 1000	...	...	Males	...	18.9	}	Total	...	17.5
			Females	...	16.1				

Mean Rate during years 1893 to 1902	...	...	...	...	20.3
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Total Deaths from Zymotic Diseases	...	...	...	...	151
------------------------------------	-----	-----	-----	-----	-----

Annual Rate of Mortality from Zymotic Diseases	...	...	17.2
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Mean Rate of Mortality from Zymotic Diseases for years 1893 to 1902	...	...	...	...	...	...	3.21
---	-----	-----	-----	-----	-----	-----	------

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Infantile Mortality Rate, 1903	...	...	...	...	...	138
--------------------------------	-----	-----	-----	-----	-----	-----

Mean Rate for years 1893 to 1902	...	...	...	...	175
----------------------------------	-----	-----	-----	-----	-----

MEDICAL OFFICER OF HEALTH'S DEPARTMENT,  
TOWN HALL,  
ST HELENS,

*June 8th, 1904.*

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*To the Chairman and Members of*

*The Health Committee,*

*Corporation of St. Helens.*

GENTLEMEN,

I have the honour to present to you the 31st Annual Report on the Health of the Borough of St. Helens, being the seventh issued since my appointment to be your Medical Officer.

This report deals with various statistics relating to the Public Health, and also with the work done by the Health Department during the year ending January 2nd, 1904.

The year 1903 may be regarded as one in which substantial progress has been made in promoting the Health interests of the Borough.

By reference to the various rates, it will be seen that in no previous year has the health of the Borough been so good.

The Birth-rate for 1903 was 39·14 per 1000, being 1·5 lower than the mean of the previous 10 years; the Death Rate was 17·5 per 1000, being 2·8 below the mean of the previous 10 years, and though Scarlet Fever was epidemic during the year, the Zymotic Rate was only 1·72 per 1000, this rate being 1·49 below the mean of the previous 10 years.

I would particularly draw your attention to my remarks on Small-Pox, and also to the report on the working of the Factory and Workshops Act. This Act has thrown considerably more work on the Health Department, and for its efficient working necessitates the appointment of an additional inspector.

The figures which I have worked out regarding the relative mortality of the different wards of the Borough have entailed a great amount of labour, but they will be of great interest in the future and even now merit your careful attention.

The appointment of a Veterinary Inspector still proves most beneficial, both as regards meat inspection and the work which he has done in examining the cows in the various shippons.

Never before, in the history of the Borough, has Typhoid Fever caused so little sickness, the number of notifications being even less than in the previous year, and the Health Committee may well congratulate themselves on the results of their efforts.

I would again urge upon you the necessity to prosecute with energy the sewage scheme for Sutton and Parr, and I would suggest that that part of the area which can be drained to the present outfall, should be proceeded with at the earliest possible moment.

The report of the work done by the Special Inspector appointed to test drains, both of old and new property, merits, I think, your attention. It is a matter for regret that this work must necessarily be slow.

I wish again to acknowledge and thank you sincerely for the kindness and assistance which it has been my good fortune to receive from every member of the Committee—and especially the Chairman and Vice-Chairman—during the year.

My thanks are also due to the Medical Practitioners in St. Helens for their assistance and cordial co-operation in all efforts to improve the Public Health.

I have further to report that the various officials connected with my department have discharged their duties satisfactorily and conscientiously.

I am, Gentlemen,

Your obedient Servant,

F. DREW HARRIS.



## POPULATION.

The population of the Borough of St. Helens was found at the census of April 1901 to be 84,410, showing an increase for the ten years 1891-1901 of 12,043. In estimating the population at the middle of the year (June 30th) 1903 the usual and, on the whole, the most reliable method is that adopted by the Registrar-General.

This method assumes that the same ratio of increase has been maintained since 1901, as took place during the intercensal period 1891-1901. Though the last census returns showed that this method was liable to very considerable errors in certain towns, it still remains the only recognised method for estimating the progress of populations. With a quinquennial census instead of a decennial one, this method would gain largely in accuracy, and it is to be hoped that the time is not far distant when a Bill will be introduced, establishing a census every five years.

The figures therefore for estimating the population in the middle of 1903 are as follows:—

Population, 1891 ...	...	...	72,367 (April)
Population, 1901 ...	...	...	84,410 (April)
Population, <b>1903</b> (estimated)	...	...	<b>87,385</b> (June)

It is on this latter figure that the various rates of the Borough are based.

The results obtained by the Registrar-General's method may be checked with fair accuracy in the following way:—It is an ascertained fact that the birth-rate in any district remains fairly constant, so long as no new conditions of labour, etc., are introduced. The average birth-rate of the last ten years is therefore found, and from the known number of births which have occurred in the year for which the estimated population is desired, the population is calculated which would give the said number of births at the above mentioned birth-rate. Thus the mean annual birth-rate in St. Helens for the years 1893-1902 is 37·64 per 1,000 of the population, whilst the number of births registered during 1903 was 3,421. This number at the above rate (37·64) would give a population of 90,914. In the present instance, however, there is reason to believe that the number of births in 1903 was in excess of the average of the past ten years. On the whole the figure obtained by the Registrar-General's method is preferable and as before stated the one adopted in this report in the calculation of the various rates.

### CAUSES OF INCREASE OF POPULATION.

The following figures show the various increases which have been registered as occurring in St. Helens during the past 19 years :—

Year.	Natural Increase.	Estimated Increase.	Increase due to Immigration.	Natural Increase Rate per 1000 of Population.
1885.	1062	1348	286	16·8
1886	1193	1379	166	18·5
1887	1030	1407	337	15·6
1888	1322	1440	118	19·6
1889	1236	1470	234	18·0
1890	1032	1504	472	14·7
†1891	1094	—	—	15·2
1892	1408	1574	166	19·2
1893	1236	1600*	364	16·4
1894	1482	1660	178	19·0
1895	1476	1710	234	18·5
1896	1389	1735	336	17·2
1897	1447	1774	327	17·4
1898	1621	1820	189	19·2
1899	1415	1858	443	16·3
1900	1184	1892	708	13·4
†1901	1453	—	—	17·1
1902	1520	1306	—	17·6
<b>1903</b>	<b>1886</b>	<b>1345</b>	<b>—</b>	<b>21·5</b>

\* This number does not include the increase which took place in the new area during 1893. † Census Year.

A natural increase of 1886 in the population of 87,385 is at the rate of **21·5** per 1000 per annum, against 17·6 in 1902.

### DISTRIBUTION OF THE POPULATION.

In the accompanying Table are given the Statistics relating to the Distribution and Density of the Population in the various Wards.

WARDS.	Population Census 1901.	Population* estimated to June 30, 1903.	Area of each Ward, 1903.	Persons per Acre in 1903.
			Acres.	
Eccleston, North ...	10551	11009	235·439	46·8
Eccleston, South ...	8835	9400	621·625	15·6
Central ...	7235	7240	94·459	77·0
Windle, North ..	11475	12002	697·084	17·2
Windle, South ..	8315	8439	67·116	125·9
Hardshaw ...	9690	9901	342·684	28·9
Sutton, East ...	8771	8975	1312·319	6·8
Sutton, West ...	9524*	9979	2429·151	4·1
Parr ...	10014	10440	1484·550	7·0
Whole Borough ...	84410	87385	7284·427	11·9

\* Including 936 in Rainhill Asylum.



**AGE DISTRIBUTION, 1903.**

AGES.						CENSUS, 1891, Old Borough Area.	CENSUS, 1901, Extended Borough.	Estimated Population at each Age in the Extended Borough, 1903.
Under 1 year	...	...	...			2398	2611	2703
1 to 2 years	...	...	...			2143	2397	2481
2 „ 3	„	...	...	...		2140	2380	2464
3 „ 4	„	...	...	...		2068	2358	2441
4 „ 5	„	..	...	...		1967	2324	2406
Total under 5 years						10716	12070	12495
5 to 10 years	...	...				9221	10884	11290
10 „ 15	„	...	...	...		8334	9727	10090
15 „ 20	„	...	...	...		7441	8546	8866
20 „ 25	„	...	...	...		6582	7961	8024
25 „ 30	„	...	...	...		6023	7274	7550
30 „ 35	„	...	...	...		5129	6047	6280
35 „ 40	„	...	...	...		4465	5257	5462
40 „ 45	„	...	...	...		3674	4451	4628
45 „ 50	„	...	...	...		2685	3688	3838
50 „ 55	„	...	...	...		2434	2860	2980
55 „ 60	„	...	...	...		1620	1999	2078
60 „ 65	„	...	...	...		1407	1679	1746
65 „ 70	„	...	...	...		763	998	1041
70 „ 75	„	...	...	...		461	590	618
75 „ 80	„	...	...	...		227	249	265
80 „ 85	„	...	...	...		83	99	102
85 „ 90	„	...	...	..		19	23	24
90 „ 95	„	...	...	...		4	5	5
95 „ 100	„	...	...	...		—	3	3
						71288	84410	87385

**BIRTHS.**

The number of Births registered during 1903 was **3,421**. This number is 199 above that registered in 1902, The birth-rate, therefore is **39·14** per 1000 of the population.

In the following Table will be found the number of births registered during the years 1893 to 1903 and the birth rate for each year:—

YEAR.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Totals.	Rate per 1000 per year.
1893 .....	745	747	776	731	3029	40·1
1894 .....	781	716	653	732	2882	37·0
1895 .....	884	796	775	710	3165	32·8
1896 .....	777	783	714	768	3042	37·4
1897 .....	823	769	813	788	3193	38·5
1898 ..... ..	896	776	767	823	3262	38·4
1899 .....	802	762	763	788	3115	35·9
1900 .....	886	743	768	701	3098	35·0
1901 .....	815	765	792	756	3128	36·9
1902 .....	848	798	801	775	3222	37·4
Mean of } 10 years } ...	825	765	762	757	<b>3113</b>	<b>36·9</b>
<b>1903</b>	Males...	<b>403</b>	<b>439</b>	<b>428</b>	<b>1752</b>	<b>39·14</b>
	Females	<b>416</b>	<b>406</b>	<b>391</b>	<b>1669</b>	
	Total ...	<b>819</b>	<b>845</b>	<b>819</b>	<b>3421</b>	
	Rate per 1000	<b>37·4</b>	<b>38·6</b>	<b>37·4</b>	<b>42·9</b>	

In England and Wales the birth-rate during 1903 was 28·4 per 1000 of the population, it is 1·0 per 1000 below the average rate of the previous ten years; that of St. Helens being 2·24 above the mean of the previous ten years.

It will be observed that during 1903, the highest birth-rate was registered during the 4th Quarter.

Of the 3,421 children born during 1903, 1,752 were males, and 1,669 were females, this being in the proportion of 100 males to 95·2 females. According to the Census of 1901 there were 100 males to 93·5 females in St. Helens, whereas in England and Wales at the same period there were 100 males to 106·4 females.

YEAR.	BIRTH RATES.			
	England and Wales.	St. Helens.	33 Great Towns.	25 other Large Towns.
1893	30·8	40·1	31·9	31·8
1894	29·6	37·0	30·7	30·3
1895	30·3	39·8	31·3	31·3
1896	29·7	37·4	30·7	30·1
1897	29·6	38·5	30·7	30·0
1898	29·4	38·4	30·3	29·4
1899	29·3	35·9	30·1	30·2
1900	28·9	35·0	29·4	29·2
1901	28·5	36·9	30·0	29·9
1902	28·6	37·4	30·0*	—
Means	29·4	37·6	30·5	30·2
<b>1903</b>	<b>28·4</b>	<b>39·1</b>	<b>27·4*</b>	—

\* Birth-rate of the 76 great towns, so classified since the last census.

In the Table given above are set out the birth-rates for the past 10 years in England and Wales, the 33 great towns, 25 other large towns, and St. Helens. The consistently high birth-rate of St. Helens compared with these will be noted.

In Table E will be found the birth-rates for each of the 76 great towns in England and Wales, and it will be noticed in only one of these towns was there a birth-rate higher than in St. Helens, viz.:—Rhondda. Merthyr, Middlesboro', Gateshead, Wigan, Warrington, and Sunderland, are the only other towns with a birth rate over 35·0 per 1,000.



### ILLEGITIMACY.

St. Helens has always had a comparatively low rate of illegitimacy, so low indeed that probably it does not influence the mortality statistics to any appreciable degree as it does in some other districts.

Of the 3,421 births registered during 1903, 76 were illegitimate. This is in the proportion of 977·8 legitimate births and 22·2 illegitimate births in every 1000, or, in other words, 2·2% of the total births were illegitimate.

Year.	Legitimate.	Illegitimate.
1887	971	29
1888	970	30
1889	975	25
1890	976	24
1891	974	26
1892	981	19
1893	974	26
1894	968·5	31·5
1895	975·0	24·9
1896	972·3	27·6
1897	976·5	23·4
1898	972·4	27·5
1899	977·9	22·1
1900	978·4	21·6
1901	975·7	24·3
1902	976·7	23·2
<b>1903</b>	<b>977·8</b>	<b>22·2</b>

The above figures do not include the births which occurred in Whiston Workhouse.

It is satisfactory to know that the statistics for St. Helens regarding illegitimacy compare favourably with those of any other town in England, and are below the figures for the whole of England.

### MORTALITY RATE.

The deaths of **1,535** persons took place during 1903 within the Borough of St. Helens. Of these **830** were males and **705** females. This number is equal to an uncorrected death-rate of **17·5** per 1000 of the population.

For comparative purposes certain corrections have to be applied as follows :—

#### I. To be deducted—

	MALES.	FEMALES.	TOTAL.
(a) Deaths in Rainhill Asylum (Main Building) ... ..	52	35	87
(b) Deaths of Haydock patients at the Isolation Hospitals ... ..	3	0	3
(c) Deaths of patients at the St. Helens Hospital who were admitted from Districts outside the Borough...	3	0	3
(d) Deaths at the Providence Hospital under similar conditions ...	3	0	3
Totals ...	61	35	96

## II. To be added—

	MALES.		FEMALES.		TOTAL.
(a) Deaths of St. Helens patients in Whiston Workhouse Infirmary }	74	...	42	...	116
(b) Deaths at Old Wint Small-Pox Hospital, of patients from St. Helens...      ...      ...      ... }	0	...	0	...	0
(c) Deaths at Rainhill Asylum of patients from St. Helens      ... }	8	...	5	...	13
<hr/>					
Total      ...	82	...	47	...	129

The corrected number of deaths is therefore **1,568**, and the death-rate for St. Helens, with these corrections, is **17·9** per 1000 of the population. This number is 1·8 per 1000 below the rate in the preceding year—*i.e.*, 1902, **19·7**.

The death-rate for 1903 is also **2·8** per 1000 below the mean-rate of the preceding 10 years (20·3).

In England and Wales the death-rate during 1903 was at the rate of 15·4 per 1000 of the population, and this rate was 2·2 per 1000 below the mean rate for the ten years—1893 to 1902.

On page 40 will be found the recorded death-rates for St. Helens during 30 years.

It will be noted that never before has so low a death-rate been recorded. The nearest approach is the death-rate of 18·02 recorded in 1894. This must certainly be regarded as a most satisfactory state of affairs.

In Table E (page 36) will be found the Mortality Statistics in other towns. In comparing these with St. Helens,—the social conditions,—the age and sex distribution,—and the nature of the staple industries in each town should be taken into consideration. It will, however, be noted in comparing the Mortality Statistics of St. Helens with those of the 75 other great towns that though the St. Helens death-rate is above the mean death-rate of these towns (17·9 against 16·3), that there are twenty towns with a higher mortality and fifty-five with a lower rate—a great improvement to last year when there were only seven towns with a higher death-rate.

In former reports great stress has been laid on the influence which the age and sex constitution of a population exercises on the death-rate, and in the report for 1898 it was shown how these factors might be eliminated and the rates of different centres be accurately compared.

It is unnecessary to recapitulate these facts, and it will be sufficient merely to append the following table.



Subjoined is a Table showing accurate comparison between the death-rates for St. Helens with those for England and Wales, and also the comparative mortality figures for the years 1891—1903.

YEAR.	Crude Death-rates of St. Helens.	Standard Death-rates of St. Helens.	Factor of Correction.	Corrected Death-rates of St. Helens.	Death-rates for England and Wales.	Comparative Mortality figures, England and Wales, = 1000
1891	26.02	17.46	1.09679	28.53	20.22	1411
1892	20.55	„	„	22.53	18.98	1187
1893	23.46	„	„	25.73	19.17	1342
1894	18.02	„	„	19.76	16.59	1191
1895	21.08	„	„	23.12	18.73	1234
1896	20.24	„	„	22.19	17.19	1291
1897	21.0	„	„	23.03	17.43	1321
1898	19.06	„	„	20.9	17.6	1187
1899	19.42	„	„	21.3	18.33	1162
1900	21.54	„	„	23.62	18.3	1291
1901	19.76	„	„	21.67	16.9	1282
1902	19.7	16.80	1.0839	21.71	16.28	1334
<b>1903</b>	<b>17.9</b>	„	„	<b>19.40</b>	<b>15.4</b>	<b>1259</b>

Thus taking the present year, the number of persons among whom 1,000 deaths would have occurred in England and Wales would have given 1259 deaths in St. Helens. This comparative mortality figure is considerably better than that of the last three years, but still leaves room for improvement.

By reference to Table F it will be seen, judging by the comparative mortality figure, that as many as 19 towns stand below St. Helens.

The death-rates in each Quarter of the past six years are seen below:—

	1898	1899	1900	1901	1902	<b>1903</b>
1st Quarter ..	18.4 ...	20.0 ...	26.2 ...	18.5 ...	23.4 ...	<b>17.1</b>
2nd „ ...	16.4 ...	16.1 ...	19.6 ...	18.2 ...	19.6 ...	<b>15.9</b>
3rd „ ...	21.9 ...	22.9 ...	23.2 ...	24.6 ...	17.5 ...	<b>17.1</b>
4th „ ...	20.5 ...	19.3 ...	17.3 ...	17.5 ...	18.5 ...	<b>20.0</b>

It will be noted that the death-rates in the first, second, and third quarters were quite satisfactory, the highest rate being in the 4th Quarter,

In order to analyse broadly the causes of death the following table has been appended. It shows the number of deaths from various groups of diseases for the years 1893-1903, together with the average for the ten years.

TABLE SHOWING ANNUAL NUMBER OF DEATHS FROM VARIOUS GROUPS  
OF DISEASES DURING PAST ELEVEN YEARS.

	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	Mean	1903
Zymotic diseases .. ..	425	191	276	326	388	285	278	319	245	243	297	<b>166</b>
Parasitic diseases .. ..	1	2	2	2	5	2	—	3	1	—	1	—
Dietic diseases .. ..	2	—	4	2	7	5	4	7	7	1	4	<b>10</b>
Constitutional diseases ..	210	216	241	230	234	219	222	264	209	265	231	<b>232</b>
Developmental „ ..	84	74	122	96	101	114	99	125	123	143	108	<b>125</b>
Diseases of Nervous System	191	180	182	197	182	210	217	237	181	211	198	<b>211</b>
„ „ Respiratory „	390	302	344	356	375	332	379	439	326	142	338	<b>364</b>
„ „ Circulatory „	63	74	88	77	71	73	90	100	94	82	81	<b>89</b>
„ „ Digestive „	147	116	146	150	148	154	157	176	192	135	152	<b>113</b>
Other local diseases ..	52	38	47	39	51	43	52	54	54	55	48	<b>67</b>
Deaths from violence .. ..	49	65	53	61	48	56	55	52	65	56	56	<b>68</b>
Ill-defined diseases .. ..	154	142	169	132	136	148	147	138	150	109	142	<b>90</b>
All causes .. ..	1769	1400	1674	1668	1746	1641	1700	1914	1675	1702	1688	<b>1535</b>

From the above table it will be seen that the deaths from all causes were 153 below the mean of the previous ten years. This reduction was due practically entirely to the diminished number of deaths from zymotic diseases, which were as much as 131 below the mean. and this, in spite of the fact that Scarlet Fever and Whooping Cough were epidemic during the year, and that the Borough was visited by an epidemic of small-pox. The large reduction, however, in diarrhoeal diseases, due largely to the cold wet, summer, was mainly responsible for this. Digestive Diseases were also 39 below the mean, and deaths from ill-defined causes were 52 below.

On the other hand Developmental Diseases caused 17 deaths above the mean; Diseases of the Nervous System 13; Diseases of the Respiratory System 26; and deaths from Violence 12 above the mean. In the other classes of diseases set out the number of deaths recorded, corresponded closely with the mean number recorded in the previous ten years.

These results may be regarded as highly satisfactory, the marked reduction in deaths from zymotic diseases being specially so.

It should be added that this comparison is only approximate, as no account is taken of the increase of the population. The various diseases will be treated of more fully under their respective heads.

The death-rates of Males and Females during the past six years are as follows :—

		Males.		Females.		Total.
1898	...	20·9	...	17·7	...	19·3
1899	...	21·5	...	17·7	...	19·6
1900	...	21·8	...	21·3	...	21·6
1901	...	21·3	...	18·1	...	19·7
1902	...	20·2	...	19·2	...	19·7
<b>1903</b>	...	<b>18·9</b>	...	<b>16·1</b>	...	<b>17·5</b>

The death-rates in the various Wards are shewn below :—

WARDS.	Death-rate 1898.	Death-rate 1899.	Death-rate 1900.	Death-rate 1901.	Death-rate 1902.	Death-rate <b>1903.</b>
Eccleston, North	23·1	19·1	21·7	22·1	19·2	<b>17·7</b>
Eccleston, South	11·3	13·3	17·4	18·8	15·0	<b>14·7</b>
Central ... ..	14·6	16·3	19·7	14·4	20·1	<b>13·0</b>
Windle, North ...	17·6	15·2	18·1	18·4	14·2	<b>14·9</b>
Windle, South ...	14·8	15·9	17·9	18·4	17·5	<b>12·1</b>
Hardshaw‡ ...	24·4‡	22·6‡	21·0‡	17·7‡	20·3	<b>21·6</b>
Sutton, East† ...	15·6†	17·9†	17·7†	15·8†	19·3	<b>18·3</b>
Sutton, West* ...	31·4*	32·1*	35·2*	32·7*	31·9	<b>24·2</b>
Parr ... ..	21·1	24·0	25·3	20·6	20·7	<b>20·0</b>

\*Including Deaths in Rainhill Asylum (main building), and in the Fever Hospital.

† Do. do. The St. Helens Hospital.

‡ Do. do. The Providence Hospital.

The reduction in the death-rate in North Eccleston and Parr is a matter for congratulation. It should also be pointed out that the high rate in West Sutton is almost wholly accounted for by the deaths in Rainhill Asylum, this institution furnishing one third of the total deaths in the Ward. The very low death-rate in South Windle and Central Wards is worthy of comment.



In the report for 1898, the influence on the death-rate of the age and sex constitution of a population was emphasised at some considerable length. The steps by means of which this factor could be eliminated were there set out, and in explanation of the following tables it will be only necessary to briefly summarise these steps.

At the last census, the age and sex constitution of the populations of the various wards of the Borough were obtained, and from these, factors of correction have been worked out. By this means an absolute test is provided of the relative healthiness of the various wards, and should prove of the greatest value in the future.

The steps briefly are as follows :—

1. Having obtained the age and sex constitution of the given population and the mean death-rate in England and Wales at the same age groups for the decennial period 1891-1900, it is calculated what the yearly number of deaths should be among the total population, assuming that the death-rates were the same in the given population as in the whole of England and Wales.

2. The death-rate per 1,000 is then found from the total population and from the total number of deaths as calculated above. The rate, so obtained, is known as the standard death-rate.

3. The ratio which the mean annual death-rate for England and Wales during the ten year 1891-1900 (18·21) bears to the standard death-rate taken as unity is now found, such ratio being the “factor of correction” for age and sex constitution.

4. By multiplying the crude or recorded death-rates of each ward from 1901-1910 by this “factor of correction,” the true or corrected death-rate will be obtained. In other words the death-rate has been found which would have occurred if the age and sex constitution of the population of each ward had been the same as that of England and Wales as a whole, and the effect of age and sex constitution has been eliminated. The true influence which insanitary conditions etc., exercise on the public health is at once apparent.

5. The comparative mortality figure can then be obtained by finding the proportion which the corrected death-rate in each year bears to the death-rate for England and Wales in the same year taken as 1,000.

**NORTH ECCLESTON.****MALES.**

Ages.	Population.	Death rates in England & Wales.	No. of Deaths.
0— 5 yrs. ...	893	62·71	56·00003
5—10 „ ...	758	4·31	3·26698
10—15 „ ...	633	2·45	1·55085
15—25 „ ...	1086	4·38	4·75668
25—35 „ ...	949	6·76	6·41524
35—45 „ ...	599	11·50	6·88850
45—55 „ ..	345	18·95	6·53775
55—65 „ ...	184	34·95	6·43080
65—75 „ ...	80	70·39	5·63120
75—85 „ ...	16	146·12	2·33792
85 and upwards	1	286·87	0·28687
	5544		100·10282
<b>FEMALES.</b>			
0— 5 yrs. ...	865	52·80	45·67200
5—10 „ ...	731	4·37	3·19447
10—15 „ ...	554	2·57	1·42378
15—25 „ ...	851	4·06	3·45506
25—35 „ ...	846	6·08	5·14368
35—45 „ ...	514	9·59	4·92926
45—55 „ ...	347	14·74	5·11478
55—65 „ ...	195	28·44	5·54580
65—75 „ ...	92	60·72	5·58624
75—85 „ ...	10	130·60	1·30600
85 and upwards	2	261·42	0·52284
Females ...	5007		81·89391
Males ...	5544		100·10282
Total ...	10551		181·99673



**SOUTH ECCLESTON.****MALES.**

Ages.	Population.	Death rates in England & Wales.	No. of Deaths.
0— 5 yrs. .	630	62·71	39·50730
5—10 „ ..	544	4·31	2·34464
10—15 „ ...	513	2·45	1·25685
15—25 „ ...	956	4·38	4·28728
25—35 „ ..	714	6·76	4·82664
35—45 „ ..	484	11·50	5·56600
45—55 „ ..	323	18·95	6·12085
55—65 „ ...	195	34·95	6·81625
65—75 „ ...	84	70·39	5·91276
75—85 „ ...	24	146·12	3·50688
85 and upwards	3	286·87	0·86061
	4470		81·00606

**FEMALES.**

0— 5 yrs. ..	598	52·80	31·57440
5—10 „ .	547	4·37	2·39039
10—15 „ ...	526	2·57	1·35182
15—25 „ ...	843	4·06	3·42258
25—35 „ ...	651	6·08	3·95808
35—45 „ ..	525	9·59	5·03475
45—55 „ ..	336	14·74	4·95264
55—65 „ ...	204	28·44	5·80176
65—75 „ ..	105	60·72	6·37565
75—85 „ ...	30	130·60	3·91800
85 and upwards	—	261·42	—
Females ..	4365		68·88007
Males... ..	4470		81 00606
Total ... ..	8835		149·88613

**CENTRAL.****MALES.**

Ages.	Population.	Death rate for England & Wales.	No. of Deaths.
0— 5 yrs. ...	441	62·71	27·65511
5—10 „ ..	439	4·31	1·89209
10—15 „ ...	432	2·45	1·05840
15—25 „ ...	798	4·38	3·49524
25—35 „ .	534	6·76	3·60984
35—45 „ ...	512	11·50	5·88800
45—55 „ ...	396	18·95	7·40420
55—65 „ ...	186	34·95	6·50070
65—75 „ ...	60	70·39	4·22340
75—85 „ ...	13	146·12	1·89956
85 and upwards	—	286·87	—
	3811		63·62654

**FEMALES.**

0— 5 yrs. ...	468	52·80	24·71240
5—10 „ ...	427	4·37	1·86599
10—15 „ ...	409	2·57	1·05113
15—25 „ ...	714	4·06	2·89884
25—35 „ ...	439	6·08	2·66912
35—45 „ ...	401	9·59	3·84559
45—55 „ ...	313	14·74	4·61362
55—65 „ ...	164	28·44	4·66416
65—75 „ ...	79	60·72	4·79688
75—85 „ ...	9	130·60	1·17540
85 and upwards	1	261·42	0·26142
Females ...	3424	17·14	52·65455
Males... ..	3811	19·32	63·62654
Total ... ..	7235		116·28109

**NORTH WINDLE.****MALES.**

Ages.	Population.	Death rate in England & Wales.	No. of Deaths.
0— 5 yrs. ...	744	62·71	46·65624
5—10 „ ...	729	4·31	3·14199
10—15 „ ...	672	2·45	1·64640
15—25 „ ...	1168	4·38	5·11584
25—35 „ ...	957	6·76	6·46932
35—45 „ ...	655	11·50	7·53250
45—55 „ ...	434	18·95	8·22430
55—65 „ ...	228	34·95	7·96860
65—75 „ ...	94	70·39	6·61666
75—85 „ ...	23	146·12	3·36076
85 and upwards	1	286·87	0·28687
	5705		97·01948

**FEMALES.**

0— 5 yrs. ...	741	52·80	39·12480
5—10 „ ...	727	4·37	3·17699
10—15 „ ..	668	2·57	1·71676
15—25 „ ...	1155	4·06	4·68930
25—30 „ ...	950	6·08	5·77600
35—45 „ ...	643	9·59	6·16637
45—55 „ ...	453	14·74	6·67722
55—65 „ ...	266	28·44	7·56504
65—75 „ ...	133	60·72	8·07576
75—85 „ ...	31	130·60	4·04860
85 and upwards	3	261·42	0·78426
Females ...	5770		87·80110
Males ... ..	5705		97·01948
Total .. ...	11475		184·82058

**SOUTH WINDLE.****MALES.**

Ages.	Population.	Death rate in England & Wales.	No. of Deaths.
0— 5 yrs. ...	587	62·71	36·81077
5—10 „ ...	523	4·31	2·25413
10—15 „ ...	455	2·45	1·11475
15—25 „ ...	859	4·38	3·76242
25—35 „ ...	661	6·76	4·46836
35—45 „ ...	505	11·50	5·80750
45—55 „ ..	335	18·95	6·34825
55—65 „ ...	191	34·95	6·67545
65—75 „ ...	82	70·39	5·77198
75—85 „ ...	8	146·12	1·16896
85 and upwards	—	286·87	—
	4206		74·18257

**FEMALES.**

0— 5 yrs. ..	533	52·80	28·14240
5—10 „ ..	577	4·37	2·52149
10—15 „ ...	485	2·57	1·24645
15—25 „ ...	773	4·06	3·13838
25—35 „ ...	622	6·08	3·78176
35—45 „ ...	467	9·59	4·47853
45—55 „ ..	307	14·74	4·52518
55—65 „ ...	217	28·44	6·17148
65—75 „ ...	98	60·72	5·95056
75—85 „ ...	29	130·60	3·78740
85 and upwards	1	261·42	0·26142
Females ...	4109		64·00505
Males... ..	4206		74·18257
Total ... ..	8315		138·18762



**HARDSHAW.****MALES.**

Ages.	Population.	Death rates in England & Wales.	No. of Deaths.
0— 5 yrs. ...	649	62·71	40·69879
5—10 „ ..	598	4·31	2·57738
10—15 „ ...	572	2·45	1·40140
15—25 „ ..	1068	4·38	4·67784
25—35 „ ...	791	6·76	5·14716
35—45 „ ..	603	11·50	6·93450
45—55 „ ..	430	18·95	8·14850
55—65 „ ..	230	34·95	8·03850
65—75 „ ..	90	70·39	6·33510
75—85 „ ..	11	146·12	1·60732
85 and upwards	2	286·87	·57374
	5044		88·14023
<b>FEMALES.</b>			
0— 5 yrs. ...	629	52·80	33·21120
5—10 „ ...	567	4·37	2·47779
10—15 „ ...	555	2·57	1·42635
15—25 „ ...	962	4·06	3·90572
25—35 „ ...	706	6·08	4·29240
35—45 „ ...	519	9·59	4·97721
45—55 „ ..	378	14·74	5·57172
55—65 „ ..	216	28·44	6·14304
65—75 „ ...	85	60·72	5·16120
75—85 „ ...	20	130·60	2·61200
85 and upwards	9	261·42	2·35278
Females ..	4646		72·13141
Males ...	5044		88·14023
Total ...	9690		160·27164



**EAST SUTTON.****MALES.**

Ages.	Population.	Death rates in England & Wales.	No. of Deaths.
0 — 5 yrs. ...	627	62·71	39·31917
5—10 „ ...	572	4·31	2·46532
10—15 „ ...	476	2·45	1·16620
15—25 „ ...	893	4·38	3·91134
25—35 „ ...	805	6·76	5·44180
35—45 „ ...	581	11·50	6·68150
45—55 „ ...	348	18·95	6·59460
55—65 „ ...	190	34·95	6·64050
65—75 „ ...	77	70·39	5·42003
75—85 „ ...	16	146·12	2·33,92
85 and upwards	1	286·87	0·28687
	4586		80·26525
<b>FEMALES.</b>			
0— 5 yrs. ...	676	52·80	35·69280
5—10 „ ...	564	4·37	2·46468
10—15 „ ...	511	2·57	1·31327
15—25 „ ...	747	4·06	3·03282
25—35 „ ...	638	6·08	3·87904
35—45 „ ...	437	9·59	4·19083
45—55 „ ...	301	14·74	4·43674
55—65 „ ...	199	28·44	5·65956
65—75 „ ...	92	60·72	5·58624
75—85 „ ...	20	130·60	2·61200
85 and upwards	1	261·42	0·26142
Females ..	4186		69·12940
Males... ..	4586		80·26525
Total ... ..	8772		149·39465

**WEST SUTTON.****MALES.**

Ages.	Population.	Death rates in England & Wales.	No. of Deaths.
0— 5 yrs. ...	666	62·71	41·76486
5—10 „ ...	566	4·31	2·43946
10—15 „ ...	556	2·45	1·36220
15—25 „ ...	913	4·38	3·99894
25—35 „ ...	831	6·76	5·61756
35—45 „ ...	639	11·50	7·34850
45—55 „ ...	414	18·95	7·84530
55—65 „ ...	227	34·95	7·93365
65—75 „ ...	82	70·39	5·77198
75—85 „ ...	18	146·12	2·63016
85 and upwards	—	286·87	—
	4912		86·71261
<b>FEMALES.</b>			
0— 5 yrs. ...	680	52·80	35·90400
5—10 „ ...	609	4·37	2·66133
10—15 „ ...	498	2·57	1·27986
15—25 „ ...	853	4·06	3·46318
25—35 „ ...	695	6·08	4·22560
35—45 „ ...	543	9·59	5·20737
45—55 „ ...	384	14·74	5·66016
55—65 „ ...	217	28·44	6·17148
65—75 „ ...	96	60·72	5·82912
75—85 „ ...	33	130·60	4·30980
85 and upwards	3	261·42	0·78426
Females ...	4611		75·49616
Males ...	4912		86·71261
Total ...	9523		162·20877

**PARR.****MALES.**

Ages.	Population.	Death rates in England & Wales.	No. of Deaths.
0— 5 yrs. ...	853	62·71	53·49163
5—10 „ ...	740	4·31	3·18940
10—15 „ ...	595	2·45	1·45775
15—25 „ ...	1044	4·38	4·57272
25—35 „ ...	839	6·76	5·67164
35—45 „ ..	603	11·50	6·93450
45—55 „ ..	387	18·95	7·33365
55—65 „ ..	184	34·95	6·43080
65—75 „ ...	73	70·39	5·33847
75—85 „ ..	19	146·12	2·77628
85 and upwards	3	286·87	0·86061
	5340		98·05745
<b>FEMALES.</b>			
0— 5 yrs. ...	790	52·80	41·71200
5—10 „ ...	666	4·37	2·91042
10—15 „ ...	617	2·57	1·58569
15—25 „ ...	824	4·06	3·34544
25—35 „ ...	693	6·08	4·21344
35—45 „ ...	478	9·59	4·58402
45—55 „ ...	317	14·74	4·67258
55—65 „ ...	185	28·44	5·26140
65—75 „ ...	86	60·72	5·22192
75—85 „ ...	18	130·60	2·35080
85 and upwards	0	261·42	—
Females ...	4674		75·85771
Males... ..	5340		98·05745
Total .. ...	10014		173·91516

<b>NORTH ECCLESTON.</b>			...	Standard Death-rate	...	17.25
				Factor for Correction	...	1.0556
			CORRECTED DEATH-RATE.		COMPARATIVE MORTALITY FIGURE.	
1901	...	...	23.33	...	...	1380
1902	...	...	20.27	...	...	1245
1903	...	...	18.68	...	...	1213
			Average		...	1279
<b>SOUTH ECCLESTON.</b>			...	Standard Death-rate	...	16.97
				Factor for Correction	...	1.0737
			CORRECTED DEATH-RATE.		COMPARATIVE MORTALITY FIGURE.	
1901	...	...	20.18	...	...	1193
1902	...	...	16.10	...	...	989
1903	...	...	15.78	...	...	1024
			Average		...	1069
<b>CENTRAL.</b>			...	Standard Death-rate	...	16.07
				Factor for Correction	...	1.13316
			CORRECTED DEATH-RATE.		COMPARATIVE MORTALITY FIGURE.	
1901	...	...	16.31	...	...	965
1902	...	...	22.77	...	...	1398
1903	...	...	14.73	...	...	956
			Average		..	1106
<b>NORTH WINDLE.</b>			...	Standard Death-rate	...	16.10
				Factor for Correction	...	1.1310
			CORRECTED DEATH-RATE.		COMPARATIVE MORTALITY FIGURE.	
1901	...	...	20.81	...	...	1231
1902	...	...	16.06	...	...	986
1903	...	...	16.85	...	...	1094
			Average		...	1104
<b>SOUTH WINDLE.</b>			...	Standard Death-rate	...	16.62
				Factor for Correction	...	1.0957
			CORRECTED DEATH-RATE.		COMPARATIVE MORTALITY FIGURE.	
1901	...	...	20.16	...	...	1192
1902	...	...	19.17	...	...	1177
1903	...	..	13.25	...	...	863
			Average		...	1077



<b>HARDSHAW.</b>		...	...	Standard Death-rate	...	16.54
				Factor for Correction	...	1.1009
		CORRECTED DEATH-RATE.			COMPARATIVE MORTALITY FIGURE.	
1901	...	...	19.48	...	...	1152
1902	...	...	22.34	...	...	1372
1903	...	...	23.78	...	...	1544
		Average			...	1356

<b>EAST SUTTON.</b>		...	...	Standard Death-rate	...	17.03
				Factor for Correction	...	1.0693
		CORRECTED DEATH-RATE.			COMPARATIVE MORTALITY FIGURE.	
1901	...	..	16.89	...	...	999
1902	...	...	20.63	...	...	1261
1903	...	...	19.56	...	...	1270
		Average			...	1177

<b>WEST SUTTON.</b>		...	...	Standard Death-rate	...	17.13
				Factor for Correction	...	1.0630
		CORRECTED DEATH-RATE.			COMPARATIVE MORTALITY FIGURE.	
1901	...	...	34.76	...	...	2057
1902	...	...	33.90	...	...	2082
1903	...	...	25.72	...	...	1670
		Average			..	1936

<b>PARR.</b>		...	...	Standard Death-rate	...	17.36
				Factor for Correction	...	1.0489
		CORRECTED DEATH-RATE.			COMPARATIVE MORTALITY FIGURE.	
1901	...	...	21.60	...	...	1278
1902	...	...	21.71	...	...	1333
1903	...	...	20.97	...	...	1361
		Average			...	1324

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Taking then the comparative mortality figures for the different wards for the three years 1901-2-3, and striking an average we obtain the following table in which the wards are arranged in the order of their healthiness. In this connection it must be pointed out that the figures for West Sutton are wholly falacious, including as they do the deaths in Rainhill Asylum. Another year it may be possible to obviate this,

Table showing comparative healthiness of the wards of the Borough obtained by taking an average of the comparative mortality figures of each ward for the past three years. The wards are arranged in the order of their healthiness.

AVERAGE COMPARATIVE MORTALITY FIGURE.				
England and Wales	...	...	..	1000
South Eccleston	...	..	..	1069
South Windle ...	...	...	.	1077
North Windle ...	...	...	...	1104
Central ...	...	...	...	1106
East Sutton ...	...	...	...	1177
North Eccleston	...	...	...	1279
Hardshaw ...	...	.	..	1356
Parr ...	...	..	...	1361
West Sutton ...	...	...	...	1936

It will be noted that the healthiness of the first four wards is quite satisfactory, and it is remarkable that Central Ward should occupy so high a position. Much work evidently remains to be done to bring Hardshaw and Parr into an equally satisfactory state. As stated above the figures for West Sutton must be put on one side for the present.

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## MORTALITY AT VARIOUS AGES.

In the following Table will be seen the Death-rates at each age group during the years 1898—1903; also the Mean rate at each age for the five years, 1898-1902.

AGES.		Death Rate per 1000 of the Population at each age Group.						
		1898	1899	1900	1901	1902	Means	1903
Under 1 year	...	198.5	168.9	196.2	192.9	203.3	191.9	<b>175.7</b>
1 to 2 years	...	77.3	71.8	78.5	67.1	69.9	72.9	<b>53.6</b>
2 „ 3 „	...	20.4	22.3	22.9	28.3	25.9	23.9	<b>21.1</b>
3 „ 4 „	...	13.4	15.1	15.1	10.5	14.5	13.7	<b>13.1</b>
4 „ 5 „	...	8.9	6.6	10.2	11.9	11.3	9.7	<b>8.7</b>
5 „ 10 „	...	3.1	3.5	4.6	5.0	5.3	4.3	<b>5.9</b>
10 „ 15 „	...	2.9	2.8	2.1	2.8	2.5	2.6	<b>2.5</b>
15 „ 20 „	...	4.0	2.9	4.0	3.5	3.4	3.5	<b>3.4</b>
20 „ 25 „	...	5.2	5.2	6.1	6.3	5.5	5.6	<b>3.3</b>
25 „ 35 „	...	7.7	8.7	9.6	7.8	6.9	8.1	<b>6.8</b>
35 „ 45 „	...	12.4	15.8	14.5	13.7	13.6	14.0	<b>10.5</b>
45 „ 55 „	...	21.1	24.3	26.9	21.0	20.5	22.7	<b>20.9</b>
55 „ 65 „	...	40.1	41.2	46.5	38.0	40.5	41.2	<b>37.6</b>
65 „ 75 „	...	61.8	96.8	96.7	70.8	79.1	81.0	<b>69.9</b>
75 „ 85 „	...	114.1	117.0	137.6	154.8	144.0	133.5	<b>160.7</b>
Upwards of 85 years.		153.8	269.2	285.7	74.0	281.2	212.9	<b>312.5</b>
All under 5 years	...	68.2	60.7	69.0	66.4	68.0	66.4	<b>57.0</b>
All over 5 years	...	10.7	12.3	13.2	11.5	11.7	11.8	<b>10.9</b>
All ages	... ..	19.3	19.6	21.6	19.7	19.7	19.9	<b>17.5</b>

From the above table, it will be seen that with the exception of the 5-10, 75-85, and 85 and upwards age groups, there was a marked reduction all round. Especially was this the case under 1 year of age, and also in the groups from 1 to 5 years. The increase noted in the two groups above 75 years may be practically neglected, as they represent comparatively few deaths, and are largely a matter outside the scope of Preventive Medicine.

The causes of death at each age group and in each Ward are set out in Table B at the end of this Report.

MORTALITY AMONG CHILDREN UNDER ONE YEAR OF AGE.

The Infantile Mortality Rate shows the number of deaths under one year of age per 1000 births. In 1903 it was **138** as against 167 in 1902, and an average of 175 during the last ten years. In England and Wales the Infantile Mortality was 132.

Appended is a Table showing the Infantile Mortality rates for the past ten years in England and Wales, the 76 great towns, 103 smaller towns, rural districts, and in St. Helens.

YEAR.	INFANTILE MORTALITY RATE.				
	England and Wales.	St. Helens.	33 Great Towns.	67 Large Towns (other than the 33).	Rural Districts.
1893	159	196	181	173	139
1894	137	161	152	115	98
1895	161	181	182	141	114
1896	148	177	168	161	104
1897	156	181	176	169	110
1898	160	172	178	173	116
1899	163	157	182	179	145
1900	154	188	172	166	138
1901	151	175	168	163	137
1902	133	167	76 Great Towns. 144		103 Smaller Towns. 134
Average of 10 yrs.	152	175	—	—	—
1903	132	138	76 Great Towns. 144		103 Smaller Towns. 135

It will be noted that the Infantile Mortality for St. Helens for 1903 is 37 per 1,000 below the mean of the last 10 years, representing a saving of over 125 infant lives. While this rate is still 6 per 1,000 above England and Wales as a whole, it is 14 per 1,000 below the mean rate for the country for the past ten years and is also 6 per 1,000 below the rate for the 76 great towns, and is only 3 per 1,000 above the rate for the 103 smaller towns.

This is a state of affairs which must be regarded as highly satisfactory.

By reference to Table E however it will be seen that of the great towns, 45 had a higher rate and 30 a lower rate. This is a great improvement on last year when St. Helens was eight from the top.



Coming now to a minute analysis of the infantile mortality in St. Helens, a Table has been prepared showing the death rates per 1,000 living under 1 year from the principal diseases incident to infant life during the past eleven years. This Table has been calculated on the population under 1 year, estimated from the returns at the last census, and is not based on the number of births per annum. By this means a more accurate result is obtained and the influence of temporary fluctuations in the birth-rate is obviated.

DEATH RATES PER 1000 LIVING UNDER 1 YEAR.

DISEASE.	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	Avge.	1903
Measles .. ..	15·08	2·68	3·36	2·56	8·61	·70	1·37	4·37	·35	6·38	4·54	<b>0·00</b>
Whooping Cough ..	3·17	9·95	1·87	12·44	2·51	3·51	5·15	8·40	1·05	3·38	5·14	<b>6·28</b>
Diarrhœa .. ..	44·46	11·49	23·18	16·83	30·51	31·59	21·29	22·51	27·01	11·27	24·01	<b>12·94</b>
Other Zymotics ..	·79	·76	1·12	5·29	1·76	2·10	·34	1·7	1·40	1·12	1·63	<b>2·58</b>
<i>All Zymotics ..</i>	<i>63·50</i>	<i>25·08</i>	<i>29·53</i>	<i>35·12</i>	<i>43·42</i>	<i>37·00</i>	<i>28·15</i>	<i>36·98</i>	<i>29·82</i>	<i>22·17</i>	<i>36·16</i>	<b>21·82</b>
Tabes Mesenterica ..	5·95	3·83	5·23	6·58	8·25	5·26	3·09	6·05	7·01	7·14	5·83	<b>4·07</b>
Other Tubercular Dis.	2·38	2·68	3·74	3·66	5·02	3·86	4·12	3·02	3·85	4·88	3·72	<b>4·40</b>
<i>All Tubercular Dis. ..</i>	<i>8·33</i>	<i>6·51</i>	<i>8·97</i>	<i>10·24</i>	<i>13·27</i>	<i>9·12</i>	<i>7·21</i>	<i>9·07</i>	<i>10·87</i>	<i>12·02</i>	<i>9·56</i>	<b>8·50</b>
Premature Birth ..	20·24	16·47	28·05	21·59	16·87	23·51	18·54	19·82	23·50	33·07	24·16	<b>25·89</b>
Nervous System ..	25·40	22·21	25·80	21·96	23·33	19·65	18·20	24·86	21·40	24·80	22·76	<b>25·52</b>
Respiratory System ..	38·50	35·94	39·64	34·77	34·10	35·45	24·38	29·23	28·07	47·35	34·34	<b>38·10</b>
Digestive System ..	5·95	11·49	19·82	10·24	5·74	15·44	6·52	9·74	5·26	12·02	10·22	<b>9·98</b>
Enteritis .. ..	19·45	12·64	8·60	15·00	20·46	11·82	17·51	21·17	22·10	9·77	15·85	<b>6·65</b>
Debility .. ..	30·96	25·66	30·66	25·25	25·48	23·16	25·06	20·82	23·85	22·17	25·30	<b>19·97</b>
Marasmus .. ..	12·70	12·64	15·33	10·98	12·56	18·60	15·79	16·12	18·24	12·40	14·53	<b>7·76</b>
Other Causes.. ..	8·33	9·57	11·96	12·81	12·20	5·96	7·55	6·05	9·82	7·51	9·17	<b>11·46</b>
Total Mortality ..	233·43	178·47	215·42	198·00	207·50	198·66	168·95	196·2	192·98	203·3	199·29	<b>175·7</b>

On comparing the rates of 1903 with the average of the past ten years, it will be seen that the total rate is below the average by as much as 23·59 per 1,000. Only once in the last ten years, namely in 1899 when the rate was 168·95 per 1,000, has so low a rate been recorded.

Taking the diseases individually it will be noted that no death occurred from Measles in a child under one year, a rate of 0·00 being recorded, as against an average rate of 4·54. This is a record which has never been approached. Whooping Cough on the other hand was above the average by 1·14 per 1,000. Most marked, however, was the enormous reduction in the rate caused by Diarrhœal diseases which was reduced by nearly half, being 11·07 below the average. This reduction almost equalled that of last year and is most gratifying, even allowing for the fact that the climatic conditions of the year were not favourable to the spread of this disease. Other zymotics caused an increased rate of nearly 1 per 1,000. Taking the rate caused by all the zymotic diseases it will be noted that a reduction is recorded equal to 14·34 per 1,000.

Tabes mesenterica gives a rate of 1·8 below the average whilst other tubercular diseases were above the average by 0·68 per 1,000. Thus the rate from all forms of tubercular disease was below the average by 1·06 per 1,000.

Premature birth was accountable for a rate of 1·73 above the average; nervous diseases and respiratory diseases also gave rates of 2·76 and 3·7 respectively above the average. On the other hand the rates caused by digestive diseases, enteritis, debility, and marasmus were below the average by 0·24, 9·20, 5·33, and 6·77 per 1,000 respectively.

Summing up then, the reduction in the zymotic, tubercular, and enteritis rates must be regarded as eminently satisfactory, pointing as they do to increased care of, and the improved conditions under which, infant life exists in the Borough.

**MORTALITY RATE PER 1,000 LIVING UNDER 5 YEARS.**

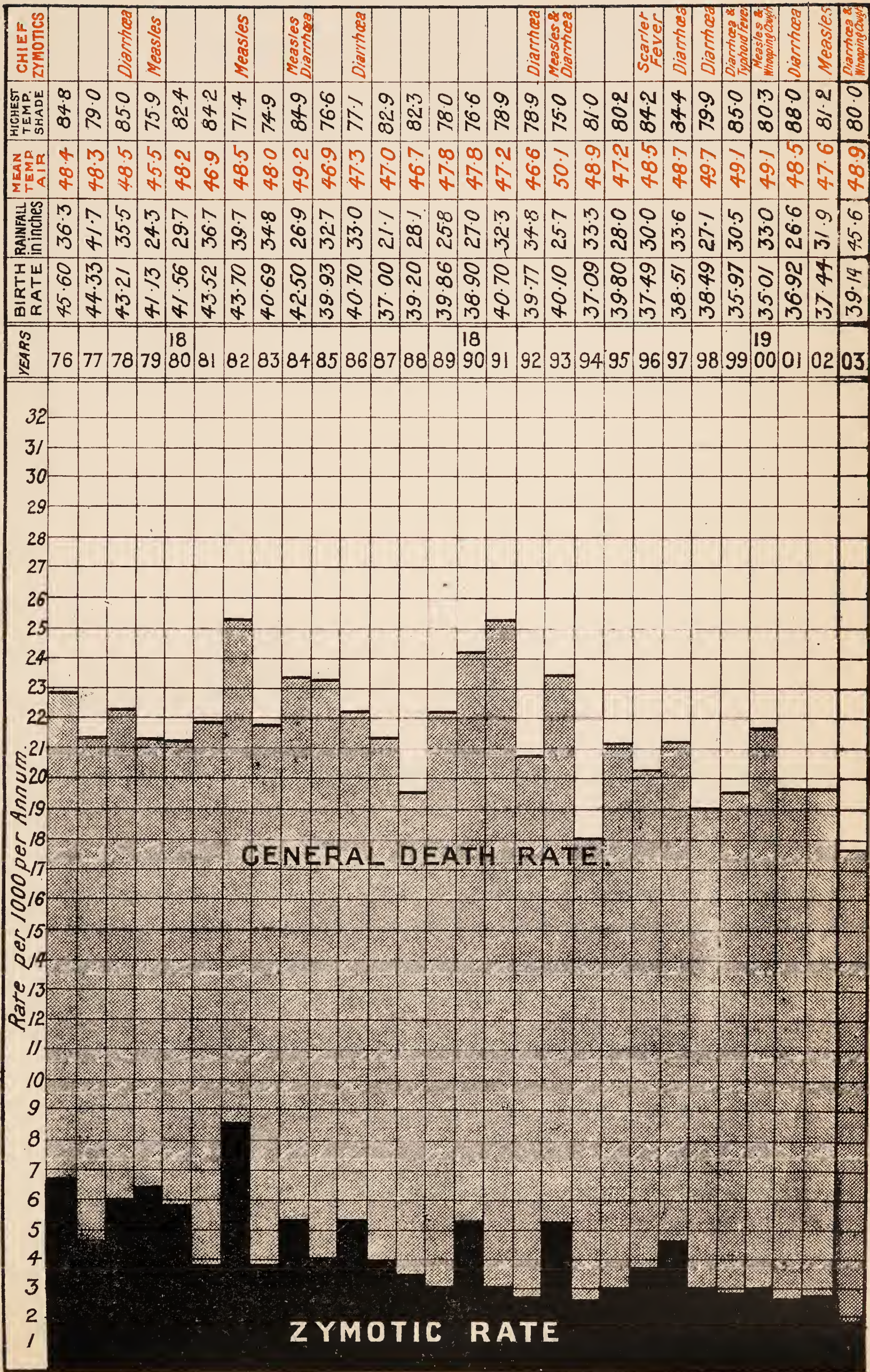
The mortality rate per 1000 living under 5 years in England and Wales and St. Helens, for each of the past 5 years, is set out below :—

	1898	1899	1900	1901	1902	Average.	1903.
England and Wales ...	55·6	55·2	53·1	54·1	—	{ For 4 years 54·5	—
St. Helens ...	68·2	60·7	69·0	66·4	68·0	{ For 5 years 66·4	<b>57·0</b>

It will be noted that the rate for 1903 is greatly below the average of the past 5 years, but is still above that of England and Wales as a whole.



CHART N<sup>o</sup> 1.



FOR 28 YEARS.







Table showing the Vital and Morial Statistics for St. Helens during 30 years.

YEARS.	Population.	Birth Rate.	Death Rate.	Zymotic Death Rate.	DEATHS FROM							
					Small Pox.	Measles.	Scarlet Fever	Typhoid and Continued Fever.	Typhus Fever.	Diarrhoea.	Whooping Cough.	Diphtheria.
1874	48790	43·0	31·43	9·2	0	29	231	25	1	110	41	14
1875	49970	45·42	24·69	5·3	0	4	77	65	1	101	31	10
1876	51190	45·60	23·28	5·1	0	102	21	40	1	86	7	15
1877	52430	44·33	22·84	3·2	0	2	12	34	1	74	48	11
1878	53700	46·21	23·99	4·2	0	4	22	40	0	132	15	20
1879	55010	41·13	22·40	5·7	0	143	83	34	2	52	2	3
1880	56340	41·56	20·05	4·6	0	0	27	40	2	130	71	1
1881	57711	43·52	21·69	2·92	0	14	28	56	0	76	3	3
1882	58972	43·70	25·46	7·4	0	250	36	33	1	85	36	6
1883	60263	40·69	21·65	2·5	0	3	14	31	1	69	24	11
1884	61584	42·50	24·16	5·3	0	131	16	33	2	131	9	11
1885	62932	39·93	23·32	3·5	0	81	13	7	1	56	53	11
1886	64311	40·70	22·46	5·2	0	102	34	28	0	122	41	10
1887	65718	37·00	21·69	3·9	0	53	35	34	0	101	28	11
1888	67158	39·20	19·80	3·1	0	38	11	22	0	65	61	21
1889	68628	39·86	23·50	4·18	0	78	3	81	1	85	15	29
1890	70132	38·90	25·43	5·3	0	19	181	24	1	74	68	13
1891	71666	40·70	26·02	3·0	0	54	24	26	0	78	29	9
1892	73240	39·77	20·55	2·64	1	23	18	25	0	84	31	12
1893	*75390	40·10	23·46	5·3	5	135	6	52	0	168	19	16
1894	*77690	37·09	18·02	2·21	0	21	14	26	2	38	61	10
1895	*79400	39·8	21·08	3·08	1	54	9	59	0	101	14	8
1896	*81136	37·49	20·24	3·63	0	38	59	40	0	63	78	17
1897	*82910	38·51	21·0	4·22	0	87	44	33	0	133	33	20
1898	*84730	38·49	19·3	3·09	0	17	24	30	0	140	34	16
1899	*86588	35·97	19·6	2·74	0	21	8	43	0	114	41	15
1900	*88480	35·0	21·6	3·04	0	59	25	19	0	91	56	19
1901	*84734	36·9	19·7	2·56	0	7	29	34	0	95	17	33
1902	*86040	37·4	19·7	2·60	0	59	52	25	0	50	18	20
1903	*87385	39·1	17·5	1·72	0	1	26	18	0	53	30	23

\* These figures include Population in Area added 1894.

TABLE E.

TABLE SHOWING COMPARATIVE STATISTICS BETWEEN  
ST. HELENS AND THE 75 OTHER GREAT TOWNS DURING 1903.

TOWN.	Population	Birth Rate per 1000	Death Rate per 1000	Infantile Rate per 1000 Births	Zymotic Rate per 1000
76 Towns .. ..	15,075,011	29·6	16·2	144	1·88
London .. ..	4,613,812	28·5	15·2	130	1·76
Croydon .. ..	141,157	26·4	11·8	104	1·08
Willesden .. ..	129,315	31·9	12·8	129	2·02
Hornsey .. ..	78,386	19·9	7·51	83	·61
Tottenham .. ..	118,000	29·5	10·7	124	1·4
West Ham .. ..	281,894	33·6	15·5	148	2·6
East Ham .. ..	110,451	34·4	11·4	113	1·57
Leyton .. ..	102,000	32·0	10·9	99	1·7
Walthamstow .. ..	106,290	33·2	11·0	113	1·9
Hastings .. ..	66,200	18·2	12·8	107	·64
Brighton .. ..	125,406	24·3	14·2	114	·84
Portsmouth .. ..	194,960	27·9	14·7	114	1·48
Bournemouth .. ..	63,132	17·7	12·1	81	·39
Southampton .. ..	110,120	28·8	13·9	114	1·31
Reading .. ..	75,277	26·9	12·9	121	·97
Northampton .. ..	89,960	24·4	13·5	137	1·3
Ipswich .. ..	68,818	28·4	15·3	140	1·38
Great Yarmouth .. ..	51,851	27·4	17·8	121	2·5
Norwich .. ..	114,351	27·8	15·4	149	1·1
Plymouth .. ..	112,022	25·4	16·5	144	1·04
Devonport .. ..	73,815	28·3	14·1	117	·93
Bristol .. ..	338,895	27·2	14·2	116	1·10
Hanley .. ..	63,166	34·8	19·0	170	2·3
Burton-on-Trent .. ..	51,450	26·5	11·8	89	·7
Wolverhampton .. ..	96,994	30·4	15·2	141	2·0
Walsall .. ..	89,878	34·0	16·4	150	1·83
Handsworth .. ..	59,000	24·6	12·5	102	·85
West Bromwich .. ..	66,558	34·6	16·8	160	2·34
Birmingham .. ..	533,039	31·7	17·2	158	·65
Kings Norton .. ..	63,072	27·5	10·2	98	·74
Smethwick .. ..	58,000	34·1	14·1	141	1·2
Aston Manor .. ..	79,417	28·7	14·8	159	2·3
Coventry .. ..	72,684	29·7	16·6	114	2·0
Leicester .. ..	220,272	27·3	13·9	161	1·45
Grimsby .. ..	65,772	28·8	14·2	167	1·93
Nottingham .. ..	248,819	28·3	16·9	165	2·0
Derby .. ..	118,707	27·0	13·4	128	·91

TABLE E (Continued).

TOWN.	Population	Birth Rate per 1000	Death Rate per 1000	Infantile Rate per 1000 Births	Zymotic Rate per 1000
Stockport .. ..	95,709	29·2	20·0	183	2·53
Birkenhead .. ..	113,343	1·02	17·0	127	2·2
Wallasey .. ..	56,000	28·7	14·0	113	1·33
Liverpool .. ..	716,810	33·3	19·8	159	2·8
Bootle .. ..	60,800	33·0	18·2	161	3·6
Wigan .. ..	62,689	35·4	21·6	174	4·18
Warrington .. ..	67,153	35·6	18·4	154	3·6
Bolton .. ..	173,401	27·1	17·6	151	1·98
Bury .. ..	58,313	22·7	17·6	174	2·13
Manchester .. ..	554,331	31·6	19·4	168	2·54
Salford .. ..	226,480	32·2	19·1	168	2·8
Oldham .. ..	138,786	25·6	18·6	160	2·4
Rochdale .. ..	84,824	24·4	17·1	138	1·38
Burnley .. ..	98,500	27·7	19·0	216	1·43
Blackburn .. ..	131,079	25·2	15·7	158	1·7
Preston .. ..	114,404	30·4	18·6	163	3·11
Barrow-in-Furness ..	65,010	30·2	11·5	99	·67
Huddersfield .. ..	94,973	23·7	16·7	120	·84
Halifax .. ..	106,800	21·0	14·9	124	·66
Bradford .. ..	283,412	23·2	16·2	147	1·32
Leeds .. ..	443,559	29·4	16·6	153	1·74
Sheffield .. ..	426,686	33·1	18·7	184	3·2
Rotherham .. ..	57,000	33·3	17·3	187	3·19
York .. ..	80,186	29·1	16·2	154	2·0
Hull .. ..	249,639	31·2	16·6	162	2·2
Middlesborough ..	96,684	36·7	21·8	186	2·8
Stockton-on-Tees ..	52,196	31·6	16·1	137	1·1
West Hartlepool ..	67,201	33·9	14·3	131	·84
Sunderland .. ..	149,572	35·1	19·9	158	2·36
South Shields .. ..	105,325	34·5	17·1	132	1·02
Gateshead .. ..	115,531	35·7	16·7	160	1·88
Newcastle-on-Tyne ..	222,241	31·1	19·2	166	1·22
Tynemouth .. ..	52,506	33·0	18·4	160	1·33
Newport (Mon.) ..	68,862	32·9	15·9	145	1·8
Cardiff .. ..	172,598	30·4	14·4	122	1·3
Rhondda .. ..	119,652	40·9	16·6	157	2·4
Merthyr Tydfil ..	71,651	38·6	18·9	153	2·6
Swansea .. ..	95,624	31·7	18·5	164	2·3
<b>St. Helens .. ..</b>	<b>87,385</b>	<b>39·1</b>	<b>17·5</b>	<b>138</b>	<b>1·7</b>



TABLE F.

RECORDED AND CORRECTED DEATH RATES PER 1,000  
PERSONS LIVING IN 76 GREAT TOWNS IN 1903.

Towns in the order of their Corrected Death-rates.	Standard Death-rate.	Factor for Correction for Sex and Age Dis- tribution.	Recorded Death-rate, 1903.	Corrected Death-rate, 1903.	Com- parative Mortality Figure, 1903.
England and Wales .. ..	18·21	1·0000	15·41	15·41	1,000
England and Wales (less the 76 towns .. ..)	18·84	0·9666	14·72	14·23	923
76 Towns .. ..	17·14	1·0624	16·26	17·27	1,121
Hornsey .. ..	15·95	1·1417	7·85	8·96	581
King's Norton .. ..	17·40	1·0466	9·96	10·42	676
Leyton .. ..	17·69	1·0294	10·80	11·12	722
Handsworth (Staffs.) .. ..	16·55	1·1003	10·40	11·44	723
East Ham .. ..	17·06	1·0674	10·96	11·70	759
Walthamstow .. ..	17·20	1·0587	11·10	11·75	762
Croydon .. ..	17·75	1·0259	11·83	12·14	788
Hastings .. ..	18·92	0·9625	12·89	12·41	805
Bournemouth .. ..	17·25	1·0557	12·10	12·77	829
Willesden .. ..	16·98	1·0724	12·11	12·99	843
Reading .. ..	17·57	1·0364	12·71	13·17	855
Burton-on-Trent .. ..	16·93	1·0756	12·32	13·25	860
Southampton .. ..	18·30	0·9951	13·78	13·71	890
Tottenham .. ..	16·87	1·0794	13·03	14·06	912
Brighton .. ..	18·47	0·9859	14·27	14·07	913
Barrow-in-Furness .. ..	16·01	1·1374	12·73	14·48	940
Norwich .. ..	19·04	0·9564	15·23	14·57	945
Derby .. ..	16·89	1·0782	13·59	14·65	951
Bristol .. ..	17·73	1·0271	14·28	14·67	952
Northampton .. ..	17·55	1·0376	14·19	14·72	955
Smethwick .. ..	16·65	1·0937	13·48	14·74	957
Devonport .. ..	17·35	1·0496	14·13	14·83	962
Ipswich .. ..	18·64	0·9769	15·24	14·89	966
Portsmouth .. ..	17·75	1·0259	14·75	15·13	982
Leicester .. ..	17·05	1·0680	14·21	15·18	985
Wallasey .. ..	16·63	1·0950	13·86	15·18	985
Grimsby .. ..	17·01	1·0705	14·19	15·19	986
Cardiff .. ..	16·74	1·0878	13·99	15·22	988
Aston Manor .. ..	16·41	1·1097	13·89	15·41	1,000
West Hartlepool .. ..	16·59	1·0976	14·29	15·68	1,018
Plymouth .. ..	18·68	0·9748	16·51	16·09	1,044
Wolverhampton .. ..	17·59	1·0352	15·54	16·09	1,044
Coventry .. ..	18·18	1·0017	16·17	16·20	1,051
Halifax .. ..	16·78	1·0852	15·02	16·30	1,058
West Ham .. ..	17·03	1·0693	15·26	16·32	1,059
London .. ..	17·32	1·0514	16·67	16·48	1,069
Great Yarmouth .. ..	19·84	0·9178	18·16	16·67	1,082



TABLE F. (Continued).

Towns in the order of their Corrected Death-rates.	Standard Death-rate.	Factor for Correction for Sex and Age Dis- tribution.	Recorded Death-rate, 1903.	Corrected Death-rate, 1903.	Com- parative Mortality Figure, 1903.
York .. ..	17·69	1·0294	16·27	16·75	1,087
Stockton-on-Tees .. ..	17·37	1·0484	16·00	16·77	1,088
West Bromwich .. ..	18·04	1·0094	16·81	16·97	1,101
Newport (Mon) .. ..	16·83	1·0820	15·71	17·00	1,103
Hull .. ..	17·78	1·0242	16·92	17·33	1,125
Walsall .. ..	17·18	1·0600	16·45	17·44	1,132
Gateshead .. ..	17·27	1·0544	16·73	17·64	1,145
Blackburn .. ..	16·10	1·1311	15·73	17·79	1,154
Nottingham .. ..	17·28	1·0538	16·93	17·84	1,158
Birkenhead .. ..	17·06	1·0674	16·76	17·89	1,161
Huddersfield .. ..	16·95	1·0743	16·73	17·97	1,166
Leeds .. ..	16·68	1·0917	16·56	18·08	1,173
Bradford .. ..	16·47	1·1056	16·39	18·12	1,176
South Shields .. ..	17·19	1·0593	17·18	18·20	1,181
Rhondda .. ..	16·55	1·1003	16·56	18·22	1,182
Rotherham .. ..	17·57	1·0364	17·63	18·27	1,186
Tynemouth .. ..	17·64	1·0323	18·17	18·76	1,217
Rochdale .. ..	16·46	1·1063	17·15	18·97	1,231
Birmingham .. ..	16·92	1·0762	17·78	19·13	1,241
<b>St. Helens</b> .. ..	<b>16·80</b>	<b>1·0839</b>	<b>17·71</b>	<b>19·20</b>	<b>1,246</b>
Bury .. ..	16·25	1·1206	17·32	19·41	1,260
Bolton .. ..	16·09	1·1318	17·46	19·76	1,282
Stockport .. ..	16·87	1·0749	18·45	19·91	1,292
Swansea .. ..	16·97	1·0731	18·59	19·95	1,295
Sheffield .. ..	16·89	1·0782	18·62	20·08	1,303
Warrington .. ..	16·87	1·0794	18·67	20·15	1,308
Merthyr Tydvil.. ..	17·19	1·0593	19·07	20·20	1,311
Hanley .. ..	16·69	1·0911	18·69	20·39	1,323
Preston .. ..	16·63	1·0950	18·68	20·45	1,327
Sunderland .. ..	17·66	1·0311	19·94	20·56	1,334
Newcastle-on-Tyne .. ..	16·88	1·0788	19·22	20·73	1,345
Oldham .. ..	16·18	1·1255	18·62	20·96	1,360
Salford .. ..	16·47	1·1056	18·97	20·97	1,361
Bootle .. ..	16·48	1·1050	19·04	21·04	1,365
Burnley .. ..	16·14	1·1283	19·16	21·62	1,403
Liverpool .. ..	17·02	1·0699	20·48	21·91	1,422
Manchester .. ..	16·30	1·1172	19·72	22·03	1,430
Middlesborough .. ..	16·71	1·0898	21·53	23·46	1,522
Wigan .. ..	16·49	1·1043	22·16	24·47	1,588

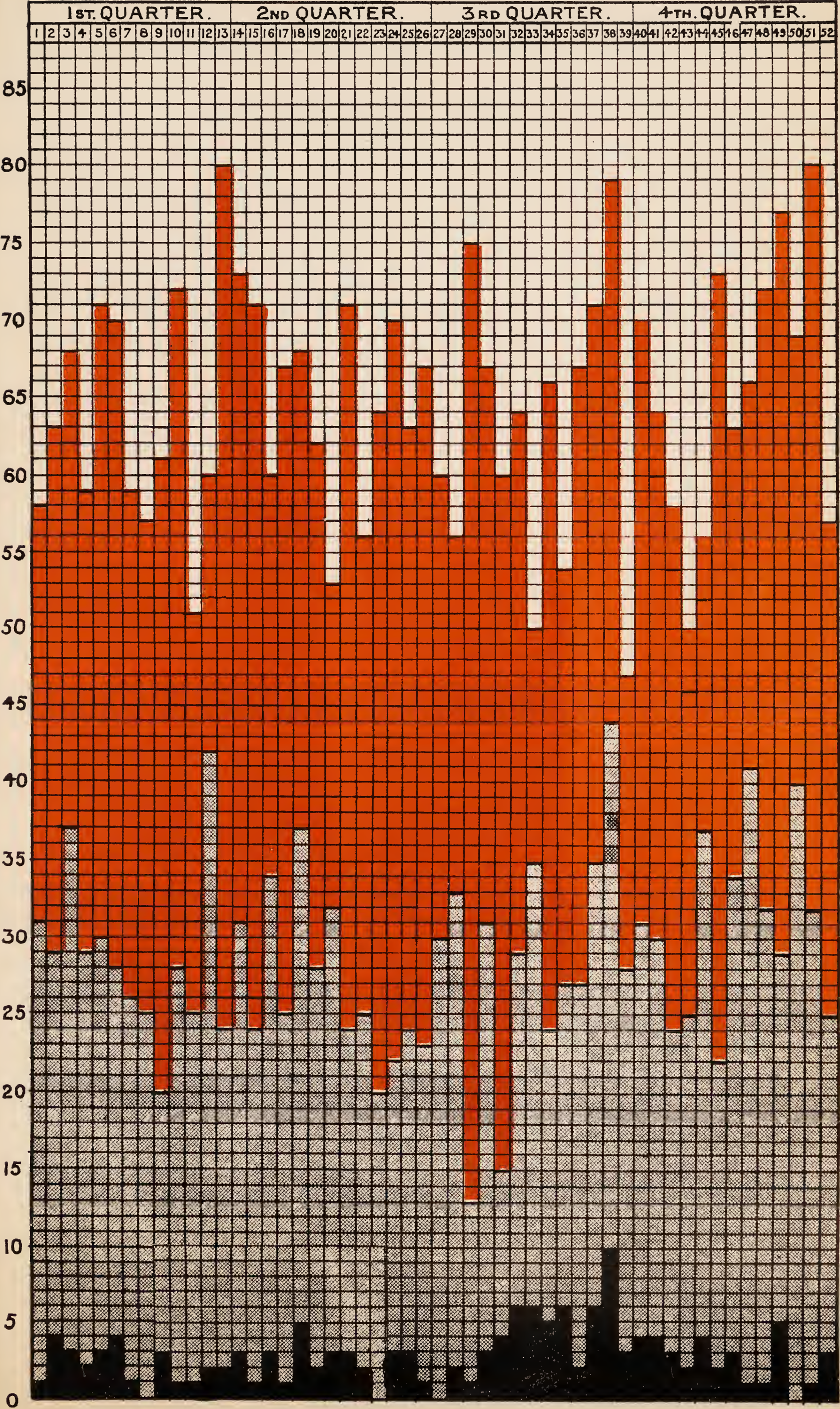
**TABLE G.**  
**WEEKLY RETURNS OF BIRTHS AND DEATHS FOR 1903.**

1903.		Deaths from all causes.	Annual Rate per 1000.	Deaths from seven principal Zymotics.	Annual Rate per 1000, for Zymotics.	Births.	Annual Rate per 1000, Births.	
Week ending	January	3	31	18.7	1	.59	58	35.0
“	“	10	29	17.5	4	2.3	63	38.0
“	“	17	37	22.0	3	1.7	68	40.4
“	“	24	29	17.2	2	1.1	59	35.1
“	“	31	30	17.8	3	1.7	71	42.2
“	February	7	28	16.6	4	2.3	70	41.6
“	“	14	26	15.4	1	.59	59	35.1
“	“	21	25	14.8	—	—	57	33.9
“	“	28	20	11.9	3	1.7	61	36.2
“	March	7	28	16.6	1	.59	72	42.8
“	“	14	25	14.8	1	.59	51	30.3
“	“	21	42	24.9	2	1.1	60	35.7
“	“	28	24	14.2	2	1.1	80	47.6
“	April	4	31	18.4	3	1.7	73	43.4
“	“	11	24	14.2	1	.59	71	42.2
“	“	18	34	20.2	3	1.7	60	35.7
“	“	25	25	14.8	1	.59	67	39.8
“	May	2	37	22.0	5	2.9	68	40.4
“	“	9	28	16.6	2	1.1	62	36.8
“	“	16	32	19.0	3	1.7	53	31.5
“	“	23	24	14.2	3	1.7	71	42.2
“	“	30	25	14.8	2	1.1	56	33.3
“	June	6	20	11.9	—	—	64	38.0
“	“	13	22	13.0	3	1.7	70	41.6
“	“	20	24	14.2	3	1.7	63	37.4
“	“	27	23	13.6	1	.59	67	39.8
“	July	4	30	17.8	—	—	60	35.7
“	“	11	33	19.6	2	1.1	56	33.3
“	“	18	17	10.1	1	.59	75	44.6
“	“	25	31	18.4	3	1.7	67	39.8
“	August	1	15	8.9	4	2.3	60	35.7
“	“	8	29	17.2	6	3.5	64	38.0
“	“	15	35	20.8	6	3.5	50	29.7
“	“	22	24	14.2	5	2.9	66	39.2
“	“	29	27	16.0	6	3.5	54	32.1
“	September	5	27	16.0	2	1.1	67	39.8
“	“	12	35	20.8	6	3.5	71	42.2
“	“	19	44	26.1	10	5.9	79	47.0
“	“	26	28	16.6	3	1.7	47	27.9
“	October	3	31	18.4	4	2.3	70	41.6
“	“	10	30	17.8	4	2.3	64	38.0
“	“	17	24	14.2	3	1.7	58	34.5
“	“	24	25	14.8	2	1.1	50	29.7
“	“	31	37	22.0	4	2.3	56	33.3
“	November	7	22	13.0	2	1.1	73	43.4
“	“	14	34	20.2	3	1.7	63	37.4
“	“	21	41	24.3	1	.59	66	39.2
“	“	28	32	19.0	1	.59	72	42.8
“	December	5	29	17.2	5	2.9	77	45.8
“	“	12	40	23.8	—	—	69	41.0
“	“	19	32	19.0	1	.59	80	47.6
“	“	26	25	14.8	3	1.7	57	33.9
“	January	2	35	20.8	3	1.7	83	49.3



CHART SHOWING WEEKLY BIRTHS, DEATHS  
& ZYMOTIC DEATHS DURING 1903.

BIRTHS DEATHS ZYMOTIC DEATHS









CAUSES OF DEATH.

THE ZYMOTIC DISEASES.

The mortality from the seven principal Zymotic Diseases, *i.e.*, Small Pox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Fever (including Typhus, Typhoid, and Continued), and Diarrhœa, was at the rate of **1·72** per 1000 per annum during 1903.

In England and Wales the rate of mortality for this Group was 1·46 per 1000 per annum during last year.

The Zymotic rate of 1·72 during 1903, which was 0·88 lower than in the preceding year, was made up as follows :—

	1899		1900		1901		1902		1903
Small Pox ..	0·00	..	00·0	..	0·00	..	0·00	..	0·00
Measles ..	0·24	..	0·66	..	0·07	..	0·68	..	0·01
Scarlet Fever	0·09	..	0·28	..	0·34	..	0 60	..	0·29
Diphtheria ..	1·07	..	0·21	..	0·38	..	0·23	..	0·26
Whooping Cough	0·47	..	0 63	..	0·20	..	0·20	..	0·34
“ Fever ” ..	0·49	..	0·21	..	0·40	..	0·29	..	0·20
Diarrhœa ..	1·31	..	1·02	..	1·41	..	0·58	..	0·60
	2·79		3·04		2·56		2·60	..	1·72

Thus the mortality from Diphtheria, Whooping Cough, and Diarrhœa is slightly higher than in the preceding year, whilst that from Measles, Scarlet Fever, and Fever is considerably lower.

The following Table shows the yearly death-rate from Zymotic Diseases during each of the past 31 years, and also the rate of each quinquennial period. It will be seen that there has been a gradual diminution taking place in the number of deaths from this group of eminently preventible Diseases, and that the rate for the past year is the lowest yet recorded.

Year.	Rate.	Year.	Rate.	Year.	Rate	Year.	Rate.	Year.	Rate.	Year.	Rate.
1873	5·0	1878	4·2	1883	2·5	1888	3·1	1893	5·3	1898	3·0
1874	9·2	1879	5·7	1884	5·3	1889	4·1	1894	2·2	1899	2·7
1875	5·3	1880	4·6	1885	3·5	1890	5·3	1895	3·0	1900	3·0
1876	5·1	1881	2·9	1886	5·2	1891	3·0	1896	3·6	1901	2·5
1877	3·2	1882	7·4	1887	3·9	1892	2·6	1897	4·2	1902	2·6
Mean	5·5		4·9		4·0		3·6		3·6		2·7

**1903**     ...     ...     ...     **1·72.**

In Table E will be found the Zymotic rates for 1903 of other towns.

These rates are however not strictly comparable, owing to the fact that Medical Officers of Health include under the heading of Diarrhœa different causes of death, some including deaths from Enteritis, etc , others excluding these deaths. It should also be borne in mind that in working-class towns like St. Helens, Zymotic Diseases are not only more prevalent but also cause a higher mortality than in towns where the children are fewer and a larger proportion are well cared for.

Taking the comparison for what it is worth, however, it will be seen that among the great towns thirty-five have a higher rate, and forty a lower rate, Wigan and Warrington heading the list with rates of 4·18 and 3·29 per 1000 respectively.

The relative prevalence of the diseases in this group in 1903 compared with the mean during the ten years—1893—1902—is set out in the following Table:—

DISEASE.	Per cent. of Zymotic Deaths.	
	10 Years, 1893-1902.	1903.
Small Pox .. ..	·22	<b>0·00</b>
Measles .. ..	18·61	<b>0·66</b>
Scarlet Fever .. ..	10·09	<b>17·22</b>
Diphtheria .. ..	6·50	<b>15·23</b>
Fever .. ..	13·57	<b>11·92</b>
Whooping Cough ..	13·86	<b>19·87</b>
Diarrhœa .. ..	37·12	<b>35·10</b>
	100%	<b>100·00</b>

It will be seen, therefore, that the relative proportion of deaths from Scarlet Fever, Diphtheria, and Whooping Cough was in excess of the mean. On the other hand, Fever, Diarrhœa, and Measles were below the mean to an even greater extent.

The Zymotic rates during each of the 4 Quarters of the years 1894 to 1903 were as follows:—

	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.
1894 ..	2·26	1·39	2·62	2·57
1895 ..	2·00	1·45	6·06	2·80
1896 ..	2·51	4·19	4·63	3·20
1897 ..	1·44	4·00	8·20	3·23
1898 ..	1·46	1·79	6·93	2·17
1899 ..	1·38	0·87	6·55	2·35
1900 ..	2·66	2·26	5·51	1·71
1901 ..	1·60	0·99	5·71	1·93
1902 ..	2·37	3·30	2·46	2·27
<b>1903 ..</b>	<b>1·32</b>	<b>1·46</b>	<b>2·47</b>	<b>1·64</b>

In Table B will be found certain details regarding the deaths from Zymotic diseases as to age groups and localities.

The following gives the number of deaths in each Ward during the nine years, 1895 to 1903:—

WARDS.	Total Deaths from 7 Principal Zymotics in each year.									Persons per Acre.	Estimated Population
	1895	1896	1897	1898	1899	1900	1901	1902	1903		
Eccleston, North	33*	50*	58*	53*	29*	41*	25*	22*	<b>23*</b>	46·8	11,009
Eccleston, South	19*	18*	33*	11*	17*	22*	19*	16*	<b>11*</b>	15·6	9,400
Central .. ..	36	36	32	24	29	29	14	7	<b>9</b>	77·0	7,240
Windle, North	20*	25*	40*	23*	19*	23*	19*	14*	<b>12*</b>	17·2	12,002
Windle, South	20	32	33	24	21	17	20	22	<b>10</b>	125·9	8,439
Hardshaw ..	19	31	36	29	26	23	23	26	<b>14</b>	28·9	9,901
Sutton, East ..	17	25	21	20	15	25	11	18	<b>9</b>	6·8	8,975
Sutton, West (†)	59	32	69	44	53	47	56	65	<b>47</b>	4·1	9,979
Parr .. ..	22	46	28	34	33	42	20	34	<b>16</b>	7·0	10,440
TOTALS ..	245	295	350	242	242	269	217	224	<b>151</b>	11 9	87,385

\* Including Deaths in the Area added to these Wards in August, 1893.

(†) Including Deaths in Fever Hospital.

It will thus be seen that the total number of deaths for 1903 was considerably less than in any of the eight previous years.

Appended is a Table showing the Yearly Number of Notifications, the Case Rate and Fatality Rate since the year 1895.

DISEASE.	1895.			1896.			1897.			1898.			1899.		
	Notifications.	Case Rate per 1000.	Fatality %	Notifications.	Case Rate per 1000.	Fatality %	Notifications.	Case Rate per 1000.	Fatality %	Notifications.	Case Rate per 1000.	Fatality %	Notifications.	Case Rate per 1000.	Fatality %
Small Pox ...	10	·12	·10	0	—	—	0	—	—	0	—	—	0	—	—
Scarlet Fever ...	222	2·70	4·05	1310	16·14	4·50	914	11·02	4·81	385	4·54	6·23	335	3·8	2·38
Diphtheria ...	60	} ·83	12·12	62	} ·88	23·61	59	} ·79	30·30	50	} ·70	26·26	64	} ·74	20·31
Membranous { Croup	6			10			7			10					
Typhoid Fever ...	257	} 3·27	22·69	165	} 2·07	23·80	147	} 1·77	22·44	136	} 1·61	22·62	221	} 2·57	19·28
Typhus Fever ...	—			—			—			—			—		
Continued Fever... Relapsing Fever...	3 —			3 —			— —			1 —			2 —		
Puerperal Fever ...	17	·21	52·94	11	·13	63·63	19	·22	52·63	7	·08	57·14	9	·10	88·88
Erysipelas ...	69	·86	1·44	137	1·68	2·91	162	1·95	1·85	173	2·04	1·73	121	1·39	2·47



DISEASE.	1900.			1901			1902.			Average.			1903.		
	Notifications.	Case Rate per 1000.	Fatality %	Notifications.	Case Rate per 1000.	Fatality %	Notifications.	Case Rate per 1000.	Fatality %	Notifications.	Case Rate per 1000.	Fatality %	Notifications.	Case Rate per 1000.	Fatality %
Small Pox ...	0	—	—	0	—	—	4	.04	.0	1.75	.02	.01	27	.30	.0
Scarlet Fever ...	580	6.5	4.31	719	8.48	4.03	1224	14.22	4.24	711.1	8.42	4.32	728	8.33	3.57
Diphtheria Membranous Croup {	77	.87	24.67	85	1.00	38.82	93	1.08	21.50	72.8	.86	24.69	126	1.44	18.25
Typhoid Fever ...	123			164											
Typhus Fever ...	—	1.40	15.32	—	1.93	20.73	81	.94	30.86	163.0	1.94	22.21	76	.86	23.68
Continued Fever...	1			—											
Relapsing Fever ...	—			—											
Puerperal Fever ...	15	.16	60.00	16	.18	43.75	14	.16	21.42	13.5	.15	55.04	6	.06	.00
Erysipelas ...	138	1.55	1.44	106	1.25	1.88	109	1.26	2.75	126.8	1.49	2.05	61	.69	.00

Thus it will be seen that the Notifications and Case Rates were below the average of the past eight years as regards Scarlet Fever, "Fever," Erysipelas, and Puerperal Fever; they were above the average as regards Small Pox and Diphtheria.



## SMALL POX.

After a lapse of six years, during which the Borough was entirely free from this disease, small pox once more visited the town in the closing weeks of 1902. From that time a steady succession of cases occurred till May 23rd, 1903, when there was a break of nearly two months. Two cases however occurred in August, after which no further cases were recorded until the end of the year. In all, 31 cases were recorded. Although the first four cases belong to the year 1902, and were referred to in last year's report they are again included now as they undoubtedly belonged to the present epidemic and the statistics would therefore be incomplete without them.

In the following account, the several cases are first referred to individually.

CASE 1. The patient was a tramp, aged 50, who apparently contracted the disease at a common lodging-house at Ormskirk, and who journeyed thence through Skelmersdale, Wigan, back to Skelmersdale and Ormskirk, and thence to St. Helens, where he took up his abode in a common lodging-house in Sandfield Crescent. Fortunately he was discovered before the disease had advanced and he was immediately removed to the Old Wint Hospital on December 20th, 1902. This patient had been vaccinated in infancy, and had two good marks, measuring about  $\frac{5}{8}$  of square inch. The disease ran a mild course, being discrete in type, and he was discharged cured after being in Hospital 31 days. While at the St. Helens lodging-house, he came in contact with 36 persons, all of whom were promptly re-vaccinated, and it is satisfactory to note that no further case occurred in any way attributable to this case.

CASE 2. The second case, also a man of no fixed abode, and aged 32, was discovered in one of the electric cars by the Matron of the St. Helens Hospital, on December 23rd. Recognising the case as one of Small Pox, she immediately called in a medical man to confirm the diagnosis, and the case was immediately removed to Hospital. The infection in this case was clearly traceable to a lodging-house in Liverpool, where he had slept a fortnight previously, and from which cases of Small Pox had been removed. On that occasion, though offered the protection of re-vaccination, he refused to avail himself of it. He had, however, been vaccinated in infancy, and possessed three good marks, measuring  $1\frac{1}{4}$  square inch. The disease was discrete, and ran a mild course. He was discharged after being in Hospital for 30 days. All the contacts it was possible to lay hands on were re-vaccinated, and the car was thoroughly disinfected. It was ascertained that this case had been to Runcorn, Rainhill, and Prescott, subsequently to his contracting the disease at Liverpool, and before he arrived at St. Helens. As far as St. Helens was concerned, no further case was attributable to him.

CASE 3. The patient was a little girl, aged 10, who resided at Allanson Street, Parr. The case was notified on Sunday, December 28th, and was immediately removed to Hospital. The source of the disease was never traced. It was found that she had never been vaccinated, and the disease, which was confluent in type, ran a severe course. She, however, eventually recovered, and was discharged after being in Hospital for 38 days. All the contacts were re-vaccinated, and no further case occurred.

CASE. 4. This patient was a rabbit hawker, aged 38, and was notified on December 30th. He was discovered in a lodging-house in Liverpool Street, where he had been living for three days. He was at once removed to Hospital, and the contacts, numbering 40, were all re-vaccinated. The source of the disease was traced to the same lodging-house at Ormskirk where case No. 1 contracted his disease. This case was also unvaccinated, and the disease, which was confluent, ran a very severe course. He was, however, discharged cured, after being in Hospital for 73 days. No further case was attributable to him.

CASE 5. This patient, aged 42, resided on Croppers Hill, and was notified on January 5th. He was at once removed to Hospital, and the contacts, numbering 6, were re-vaccinated. No definite source of the disease was discovered, though a fortnight before the appearance of the rash, he was at Newton, Lowton St. Mary's, and Haydock, and it seems probable that on this occasion he unwittingly caught the disease. He had been vaccinated in infancy, and possessed three rather faint marks, having an area of  $1\frac{1}{8}$  square inch. The disease was discrete in type, and he was discharged after remaining in Hospital 32 days. No further case occurred attributable to him.

CASE 6. This patient was a boy, aged 10, who lived in Merton Bank Road. He was notified on January 6th, and was at once removed to Hospital. The source of this case was not satisfactorily cleared up, though some suspicion attached to a foreign sailor, who had come on a visit a short time previously. Nothing definite however could be ascertained. This patient, through ill health in early childhood, had never been vaccinated. The disease, which was confluent in type, ran a severe course, and the patient was discharged after remaining in Hospital for 58 days. The contacts, numbering 14, were successfully re-vaccinated, and no further case occurred.

All the foregoing cases were discovered in the earliest stage of the disease.

CASE 7. This patient, a man aged 33, presented himself at the surgery of one of the medical men in the town, on January 15th, who at once notified the case as Small Pox. The case was removed to Hospital the same evening. This man, though a native of St. Helens, was at the time resident in Oldham, which town he left, a fortnight before the onset of the disease. From that town he proceeded to Chorley, where he slept in the casual ward on the nights of January 2nd and 3rd. He then walked to Wigan, stopping at a common lodging-house for the nights of the 4th, 5th, and 6th. On the nights of the 7th and 8th, he slept in the casual ward of the Warrington Workhouse, and on the 9th and 10th, he slept in the casual ward at Prescott. He then came to St. Helens, and stopped at a common lodging house in Salisbury Street. This case was in a more advanced stage than the previous ones. Contacts numbering 45, were all promptly re-vaccinated, but one mild case occurred amongst them, while another contact, who refused to be vaccinated, also contracted the disease. The patient had been vaccinated in infancy, and possessed three marks, measuring  $\frac{3}{4}$  square inch. The type of the disease was very discrete, and he was discharged after remaining in Hospital 22 days.



CASE 8. This patient, aged 34, was notified on January 17th. He resided in Brynn Street, and undoubtedly caught the disease in the discharge of his duties as relieving officer. He had been vaccinated in infancy, but never re-vaccinated. He possessed two good marks, measuring  $1\frac{1}{8}$  square inch. The disease, which was discrete in type, ran a mild course, and he was discharged after being in Hospital 20 days.

CASE 9. This patient, a little girl aged 11, was the daughter of the preceding case, from whom the disease was contracted. She had been vaccinated in infancy, and had one good mark, measuring  $\frac{3}{4}$  square inch. The type of the disease was extremely discrete, only two spots being found. She was discharged after 20 days isolation. The contacts in these cases, numbering 7, were re-vaccinated, and no further cases occurred.

CASE 10. This patient, aged 29, resided in Hall Street, and was notified on January 17th. He was at once removed to Hospital. The source of the disease could not be traced. He had been vaccinated in infancy, and possessed three marks, having an area of  $1\frac{1}{2}$  square inch. The disease was very discrete, and he was discharged after being isolated for 20 days. The contacts, numbering 11, were re-vaccinated, and no further case occurred.

CASE 11. This man, aged 28, resided in Stephen Street, Thatto Heath. He was notified on January 29th, and removed to Hospital the same day. The man was a collier working at one of the local collieries, and though no definite source of the disease could be traced, it seems probable that he came into contact with the infection while at his work. He had been vaccinated in infancy and possessed one very faint cicatrix, measuring  $\frac{1}{2}$  square inch. The disease, which was confluent in type, ran a severe course, and he was discharged after being in Hospital for 60 days. Fifteen contacts were re-vaccinated, whilst three refused. No further case however occurred.

CASE 12. This patient, aged 23, was notified on January 27th and removed to Hospital. He had been living for some time at the common lodging-house from which case No. 7 was removed, and undoubtedly contracted the disease there. He stated that he had been vaccinated in infancy, but no marks were to be found. On January 15th, when the former case was removed, he was successfully re-vaccinated, and although this measure did not prevent the disease, it undoubtedly modified it. In this case the infection must have been contracted between three and four days before the re-vaccination, and it seems to indicate what is generally accepted, that re-vaccination up to three days after exposure to infection stops the disease, whilst re-vaccination at a later period will modify the disease. This case ran a normal course, being discrete in type, and the patient was discharged from Hospital at the end of 24 days.

CASE 13. This patient, a man aged 51, was notified on January 30th. He had been resident at the common lodging-house in Salisbury Street, from which cases 7 and 12 had been removed. He refused the protection afforded by re-vaccination, when offered to him on the removal of the first case. He was kept under strict supervision, and on the first manifestation of the disease was removed to Hospital. He stated that he had been vaccinated in infancy, but no cicatrices could be found. The disease was confluent in type, and ran a severe course, and he was discharged after a period of isolation extending over 49 days. It is almost certain that had this man been re-vaccinated on January 15th, he would have escaped the disease. Three fresh contacts were re-vaccinated, and no further case occurred from this source.



CASE 14. This patient, a man aged 24, was notified from Albion Street on February 23rd, though he had been under observation for some days previously. The case was an extremely difficult one to diagnose, and was of a very mild type. This man, who was by trade a bricksetter, seems to have contracted the disease whilst working at the foundations of the new pavilion which was being erected at the Old Wint Hospital. He had been vaccinated in infancy, and possessed three good marks, having an area of  $1\frac{3}{8}$  square inch.

CASE 15. This patient, aged 26, was the wife of the preceding case, from whom she undoubtedly contracted the disease. She was notified on February 23rd, and removed to Hospital. She had been vaccinated in infancy, and had three good marks with an area of  $\frac{3}{4}$  square inch. Ten days before the appearance of the rash, she was successfully re-vaccinated. The disease was very discrete in type, and she was discharged after 20 days' isolation.

CASE 16. This old lady, aged 62, was the mother of case No. 14, from whom she contracted the disease. She was notified on February 23rd, from Exeter Street, and removed to Hospital. She had been vaccinated in infancy, and had two faint marks measuring  $\frac{3}{4}$  square inch. The type of the disease was confluent, and ran a severe course. She was discharged after remaining in Hospital 47 days.

CASE 17. This patient, aged 40, was the sister of case No. 14, from whom she undoubtedly contracted the disease. She was notified on February 24th, from Maxwell Street. She was vaccinated in infancy, and possessed two small but distinct marks, having an area of  $\frac{1}{4}$  inch. The disease was very discrete, and she was discharged after being in Hospital only 14 days.

CASE 18. This little boy, aged 4 years, was notified from Back Bolton Street on February 24th. No definite source of the disease could be traced, though a tramp had been at the house some little time before, and had had the child on his knee. He had been vaccinated in infancy, and had three marks, with an area of  $\frac{3}{4}$  square inch. The disease was discrete in type, but was complicated with Meningitis. He was discharged after remaining in hospital for 57 days. The contacts were re-vaccinated, and no further case occurred.

CASE 19. This was a boy, 16 years old, who was notified from Lyon Street on March 3rd. The source of the disease could not be traced. He had been vaccinated in infancy, and possessed three cicatrices, with an area of  $\frac{1}{2}$  square inch. The disease was discrete, and he was discharged after 25 days' isolation. The contacts, 8 in number, were re-vaccinated, and no further case occurred.

CASE 20. This case was that of a police constable, 42 years of age, and residing in Sutton Road. He was notified on March 5th, and removed to Hospital. The source of the infection was not traced, but it is highly probable that he contracted the disease in the discharge of his duties. He had only been vaccinated in infancy, and had three fair marks, having an area of  $1\frac{1}{8}$  square inch. The disease was discrete in type, and he was discharged after 44 days' isolation. The contacts were all re-vaccinated, and no further case occurred.

CASE 21. This patient, a woman 35 years of age, was a sister of case No. 14, and a daughter of case No. 16. She was vaccinated in infancy, and had two cicatrices with an area of one square inch. On the removal of her mother on February 23rd, she was successfully re-vaccinated. On March 2nd she was confined, and five days later she developed an extremely modified form of Small Pox. Owing to her condition, it was impossible to remove her to Hospital till March 12th. The source of the infection was undoubtedly her mother. The case ran a mild course, and she was discharged after 23 days' isolation.

CASE 22. This case was the newly born infant of previous case. He was successfully vaccinated in four places two days after birth. On the removal of his mother, he being then 10 days old, was admitted to Hospital with her. Three days later he developed an extremely modified form of Small Pox. He was discharged with his mother after 23 days in Hospital.

CASE 23. This patient, a woman 29 years of age, was notified from Exeter Street on March 13th. The source of the infection could not be traced. This woman had been vaccinated in infancy, and had three good marks, having an area of  $1\frac{1}{2}$  square inch. The contacts, numbering 7, were all re-vaccinated, and no further case occurred.

CASE 24. This case, a boy 5 years of age, was also a son of case No. 21. He was discovered by the Sanitary Authority whilst visiting the contacts, and was removed to Hospital on March 18th. He had been vaccinated in infancy, having three marks with an area of  $\frac{3}{4}$  square inch. He was also successfully re-vaccinated on February 23rd, on the outbreak of the disease in the house. It was an extremely mild case, and but for the history would no doubt have passed undetected. He was discharged after 17 days' residence in Hospital. No further cases occurred in this family.

CASE 25. This patient, a woman aged 38, was notified from Sandfield Crescent on March 21st. Although the source of the infection was at first a mystery, it has since been ascertained that she visited an old lodger of hers, resident in Prescott, about a fortnight before her own rash appeared. This man was removed to the Prescott Hospital suffering from Small Pox, the day after her visit. She stated that she had been vaccinated in infancy, but no cicatrices could be found. The disease, which was confluent in type, ran a severe course, and she was only discharged after a period of 74 days' isolation. The contacts, numbering 9, were all re-vaccinated, and no further case occurred.

CASE 26. This was a woman, 29 years old, who resided in Lyon Street. From information received, the Sanitary Inspector visited her house, and found her to be suffering from a suspicious form of illness. A medical man was at once called in, who (March 21st) notified the case as Small Pox. It is possible that this case contracted the disease from case 19, who was removed to Hospital on March 3rd, though as the rash was stated to have appeared on March 20th, the interval is rather excessive. She had been vaccinated in infancy, and possessed four marks, with an area of  $1\frac{3}{4}$  square inch. The type of the disease was very discrete, and she was discharged after 18 days' isolation. The contacts, numbering 11, were re-vaccinated, and no further case occurred.

CASE 27. This patient, a man 27 years old, was notified from a lodging-house in Mount Street on March 24th. He accompanied case No. 25 on her visit to Prescott, and undoubtedly caught the infection there. He had never been vaccinated, and the disease which was confluent in type



ran a particularly severe course, indeed this was by far the most malignant case during the epidemic. He however eventually recovered, and was discharged after remaining in Hospital 74 days. The contacts, numbering 13, were all re-vaccinated, and no further case occurred.

CASE 28. This patient, a man aged 28, was notified from Lord Street on April 6th. The source of the infection was not traceable. He was vaccinated in infancy, and possessed three good marks, having an area of  $1\frac{1}{2}$  square inch. The case was one of markedly modified Small Pox. At first it was thought that the disease would run a severe course, but the rash rapidly faded, and he was discharged after 34 days' isolation. No further case occurred among the contacts, 28 in number, who were all re-vaccinated. This case is particularly instructive as showing the efficacy of prompt and successful re-vaccination. The patient was working in a confined space with 14 others up to 6 a.m. of the day on which he was removed, yet not one of these contacts contracted the disease. They were all re-vaccinated within 36 hours of their exposure to infection.

CASE 29. This case was that of a man, 35 years old, who resided in Scholes Lane. He was notified on May 23rd, and removed to Hospital. The source of the infection was not satisfactorily traced, though he visited Liverpool about a fortnight before the appearance of the rash. He had been vaccinated in infancy, and possessed three cicatrices, with an area of  $1\frac{1}{2}$  square inch. The disease was confluent in type, and ran a fairly severe course, being complicated with a slight attack of pneumonia. He was discharged after remaining 35 days in Hospital. The contacts, numbering 9, were all re-vaccinated, and no further case occurred.

CASE 30. This case was that of a woman, aged 28, living at 3, off Houghton Road. The rash appeared on the 28th July, and the case was notified on the 4th August. Seventeen persons in contact were re-vaccinated with the exception of a woman—a lodger at the house, who was not re-vaccinated on account of her recent confinement. There was some suspicion that the disease had been imported from Bolton. She had been vaccinated in infancy, having one mark with  $\frac{1}{2}$  square inch area. The disease was discrete in type.

CASE 31. This case was the woman referred to above. She was 26 years of age. The rash appeared on August 16th, and the case was notified and removed to Hospital the same day. No further case occurred from these cases. She had been vaccinated in infancy, and had four marks with  $1\frac{1}{2}$  square inch area. The disease was discrete in type.

The foregoing cases are summarised in the following table :—

Condition as regards Vaccination.	Type of the Disease		
	Discrete.	Semi-confluent.	Confluent.
1. Vaccinated in infancy, cicatrices good...	19	1	1
2. Vaccinated in infancy, no cicatrices ...	1	—	2
3. Vaccinated in infancy, cicatrices faint ...	1	—	1
4. Vaccinated in infancy, and re-vaccinated...	1	—	—
5. Un-vaccinated ..	—	—	4
Total ..	22	1	8



From the above table it is at once apparent how efficacious is vaccination in modifying the disease. One case only amongst the well vaccinated was of the confluent type, and that one occurred in a woman 62 years of age. It is hardly surprising that the effect of a primary vaccination in infancy should have lost its power in the course of 62 years. On the other hand, all the undoubtedly unvaccinated cases were confluent, and of a very severe type, whilst three others of the confluent cases occurred in patients with none or very faint marks. In other words, 90·4% of the well-vaccinated cases were discrete in type, while only 9·5% were of the semi-confluent or confluent type. Of the badly vaccinated cases 60% were confluent, and 40% discrete. Of the unvaccinated cases, the whole or 100% were confluent.

It is worthy of note that the whole of the cases recovered, a fact which cannot but reflect credit on the nursing and the medical attention which they received.

The precautions which were taken in the epidemic were as follows. They proved eminently successful :—

1. Prompt removal of the patient to Hospital.
2. Disinfection of all clothes, etc., both of the patient and of the contacts.
3. Disinfection of the house with sulphur dioxide, while subsequently the walls were washed with strong carbolic, stripped and lime-washed.
4. Re-vaccination of all contacts who had not been re-vaccinated within a year. With the aid of a little bribery, it was found that exceedingly few refused. The contacts were subsequently kept under daily observation for a period of 17 days.
5. Where it was found that a patient had passed through other towns, the addresses of the houses where he stopped were at once forwarded to the Medical Officer of Health.

It was not found necessary to stop any of the contacts from following his employment.

In the first weeks of January, when Small-pox was spreading with great rapidity throughout Lancashire, it seemed that St. Helens would share largely in the general epidemic. Under these circumstances, it was decided to erect another pavilion. This was at once put in hand, and there is now an excellent structure of corrugated iron lined with wood, capable of containing 20 beds. This pavilion is provided with a kitchen, bath-room, linen closet, and private ward, and is supplied with hot and cold water. It is an immense improvement on the old wards, and will greatly facilitate the nursing. Although the fears expressed above were not realised, it is still a matter for congratulation that this pavilion was erected, as the old one is now getting somewhat dilapidated. The present accommodation should be sufficient for many years to come.

One lesson which has been emphasised by the epidemic, has been already alluded to, namely, the efficacy of vaccination and re-vaccination in modifying or preventing the disease. Attention is here directed to one or two points under this head, which should be included in the next Vaccination Act.





By reference to the Vaccination returns given below it will be seen that St. Helens is well equipped for dealing with an epidemic of Small Pox. In past years the percentage of un-vaccinated children has been very small, only between 3 and 4 per cent. being so returned. Even of this small proportion, a large number is due to removals from the Borough.

### VACCINATION.

The following Table shows the Vaccination Returns for 12 years. It compares favourably with that of other towns.

YEAR	1 Births.	2 Vaccin- ated.	3 Insus- ceptible	4 Dead.	5 Con. Obj'e't'r	6 Post- poned.	7 Removed	8 Un- accounted	Percentage not Vaccinated including Columns 5, 6, 7, 8
1891	*2827	2345	15	386	—	—	76	5	2·8
1892	*2817	2424	6	318	—	—	63	6	2·4
1893	*2856	2378	14	371	1	—	91	1	3·8
†1894	*2711	2284	10	312	1	—	99	5	4·6
†1895	*2943	2443	17	378	3	1	99	2	3·4
†1896	*3006	2538	14	356	—	4	92	2	3·2
†1897	*3209	2680	11	390	4	7	110	7	3·8
†1898	*3238	2696	15	383	14	1	103	15	4·4
†1899	*3126	2625	32	346	10	3	94	16	4·3
†1900	*3148	2654	10	367	5	12	82	18	4·2
†1901	3157	2639	4	391	11	29	59	24	3·8
†1902	3245	2788	4	342	7	12	58	34	3·4

\*The above Returns are for St. Helens Sub-District of the Prescot Union, which does not include quite the whole of the Borough.

† The returns in Columns 6, 7, and 8, will still further be reduced for these years.

The above figures have been supplied by Mr. Griffin, Vaccination Officer for St. Helens.



MEASLES.

Measles caused 1 death during the year, giving a death-rate of 0·01 per 1000 as against 0·68 in 1902, and ·27 in England and Wales. Comparing this number with that in former years, we obtain the following figures :—

		1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	Mean of 15 years	1903
St. Helens.	Tot. Deaths from Measles.	41	75	16	54	23	135	21	54	38	87	17	21	59	7	·59	47	1
	Death Rate per 1000	·61	1·09	·22	·75	·31	1·80	·27	·68	·46	1·04	·20	0·24	0·66	·07	·68	·60	·01
England & Wales Death Rate .. .. .		·34	·50	·43	·43	·30	·30	·37	·37	·55	·40	·42	·30	·39	·40	·38	·45	·27

The following Table shows the periods during which Measles, judged by the number of deaths, has been prevalent in each of the 20 years—1884—1903.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total Deaths in each year
1884	0	0	2	3	1	0	0	0	3	16	45	75	145
1885	36	0	10	3	2	5	2	1	0	0	0	1	70
1886	3	10	1	8	3	2	16	8	3	15	29	11	102
1887	4	3	6	6	2	1	1	4	1	6	10	10	53
1888	3	2	0	0	0	0	0	0	1	3	7	27	41
1889	10	0	8	11	5	11	3	3	1	7	2	1	75
1890	0	13	0	0	0	0	0	0	0	6	5	5	16
1891	4	0	3	14	11	6	3	0	2	3	5	0	54
1892	0	3	0	1	0	0	0	1	0	1	5	15	23
1893	31	0	31	28	5	4	2	1	2	0	0	0	135
1894	0	31	1	0	0	0	0	0	0	8	11	1	21
1895	3	0	5	3	2	11	9	6	1	1	3	0	54
1896	1	10	11	10	2	1	4	2	0	2	1	1	38
1897	0	3	2	2	15	19	9	8	6	3	13	9	87
1898	2	1	0	1	2	8	1	0	1	0	1	0	17
1899	0	1	0	0	0	2	0	0	1	5	4	9	21
1900	19	0	6	9	5	2	3	5	1	0	0	0	59
1901	0	9	1	0	1	1	0	0	0	1	0	3	7
1902	7	7	8	8	9	9	1	2	2	5	1	0	59
<b>1903</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
Totals...	123	93	96	107	65	72	54	41	25	82	142	168	1078

The following table shews the ages at which deaths from Measles occurred during the past ten years, From this it will be seen that Measles is essentially a disease of childhood, the maximum mortality being reached in the second year of life.

AGES AT DEATH FROM MEASLES—1894 TO 1903.

	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	Total.
0 to 3 months...	1	0	0	0	0	0	1	0	2	<b>0</b>	5
3 „ 6 „	0	1	0	2	0	0	1	0	1	<b>0</b>	10
6 „ 12 „	6	8	7	22	2	4	11	1	14	<b>0</b>	107
1 „ 2 years ...	9	26	14	32	12	8	25	3	28	<b>0</b>	216
2 „ 3 „ ...	2	11	11	19	2	7	12	1	6	<b>0</b>	86
3 „ 4 „ ...	2	4	3	3	0	1	4	0	3	<b>0</b>	30
4 „ 5 „ ...	0	1	3	6	1	1	2	0	3	<b>1</b>	24
5 „ 10 „ ...	1	3	0	2	0	0	3	2	2	<b>0</b>	17
Over 10 „ ...	0	0	0	1	0	0	0	0	0	<b>0</b>	4
Total at all Ages...	21	54	38	87	17	21	59	7	59	<b>1</b>	499

Never before in the history of the Borough has St. Helens been so free from Measles. Only one death occurred during the whole year, while only thirty cases were notified by the School Teachers. This compares most favourably with last year when 1,245 cases were notified and 59 deaths occurred. It was therefore not found necessary to close any Schools. This is a matter for congratulation, seeing that under the new Act the closure of a Department means financial loss to the Borough.



## SCARLET FEVER.

Scarlet Fever was again prevalent in St. Helens during 1903. **728** cases of this disease were notified, of which 26 terminated fatally, giving a death-rate of  $\cdot 29$  per 1000.

In England and Wales the death-rate was  $0\cdot 12$  per 1000.

On page 35 will be found the number of deaths from Scarlet Fever for each year since 1873. These figures, however, indicate very imperfectly the degree of prevalence of the disease, as it is evident that, at any rate in St. Helens, the degree of virulence of Scarlet Fever varies much from year to year.

The cases of sickness and death, together with the death-rates from Scarlet Fever during the years 1894-1903 are set out in the following Table :—

	1894	1895	1896	1897	1898	1899	1900	1901	1902	<b>1903</b>
Cases of Sickness ...	342	220	1310	914	385	335	580	719	1224	<b>728</b>
No. of Deaths ...	14	9	59	44	24	8	25	29	52	<b>26</b>
Death-rate per 1000 ...	$\cdot 18$	$\cdot 11$	$\cdot 72$	$\cdot 53$	$\cdot 28$	$0\cdot 09$	$0\cdot 28$	$0\cdot 34$	$0\cdot 60$	<b><math>0\cdot 29</math></b>
Mortality per 100 Cases.	4 $\cdot$ 0	4 $\cdot$ 0	4 $\cdot$ 5	4 $\cdot$ 8	6 $\cdot$ 2	2 $\cdot$ 38	4 $\cdot$ 3	4 $\cdot$ 03	4 $\cdot$ 2	<b>3<math>\cdot</math>57</b>

From the above Table it will be seen that one case died in every 22 $\cdot$ 5 attacked in 1896, 1 in every 20 $\cdot$ 75 in 1897, 1 in every 16 $\cdot$ 04 in 1898, 1 in every 41 $\cdot$ 8 in 1899, 1 in every 23 $\cdot$ 2 in 1900, 1 in every 24 $\cdot$ 8 in 1901, 1 in every 23 $\cdot$ 5 in 1902, and 1 in every 28 in 1903. Thus with the exception of 1899, the fatality was less than in any of these years. That this was largely due to the large proportion of cases isolated there can be no doubt.

## AGE INCIDENCE.

The following Table shows the ages at which the notified cases and deaths occurred.

SCARLET FEVER NOTIFICATIONS AND DEATHS AT VARIOUS AGES.

Ages .. .. .	MONTHS.					YEARS.										Total.		
	0-3	3-6	6-9	9-12	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-15	15-20		20 & over.	
Total No. of Cases } Notified ... .. }	1	2	1	6	39	52	82	92	91	67	49	41	45	102	33	25	728	
	Under 1 year, 10				Under 5 years, 275				293									
Sickness Rate per } 1000 of the Popu- }	Under 1 year, 3·6					15·7	21·0	33·5	38·2	25·9					10·1	3·7	·5	8·3
lation at each age }	Under 5 years, 22·0																	
Deaths from Scarlet } Fever at various }	0	1	1	0	2	6	7	3	1	0	1	1	0	2	1	0	26	
ages ... .. }	Under 1 year, 20·0					Under 5 years, 7·2												
Percentage or Case } Mortality ... .. }	0	0	100·0	16·6	4·1	11·5	8·5	3·2	1·0	0	2·0	2·4	0	1·9	3·0	0	3·5	

SEASONAL INCIDENCE.

The following Table shows the period of greatest prevalence of Scarlet Fever during the past 7 years in St. Helens.

YEAR.	January	February	March	April	May	June	July	August	September	October	November	December	Total
1897	123	91	118	82	70	39	40	41	68	89	78	75	914
1898	63	44	35	26	13	23	23	26	32	32	32	39	385
1899	47	37	27	28	18	26	27	23	21	34	31	16	335
1900	38	21	15	36	46	43	43	38	54	86	83	77	580
1901	59	47	45	43	56	78	73	47	76	74	57	64	719
1902	86	69	93	55	58	88	66	76	92	215	190	136	1224
1903	106	85	52	42	45	46	42	36	44	99	79	52	728

DISTRIBUTION OF SICKNESS CASES.

WARDS.	No. of Cases of Sickness from Scarlet Fever.									
	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903
Eccleston, North	29	12	231	188	54	19	52	170	201	92
Eccleston, South	29	19	214	90	37	14	30	60	160	46
Central .. ..	43	8	54	73	17	20	52	33	54	21
Windle, North ..	81	24	131	102	45	32	90	75	204	143
Windle, South .	21	19	152	78	36	26	31	46	97	44
Hardshaw ..	46	45	163	89	75	47	59	66	120	90
Sutton, East ..	19	35	141	108	27	61	71	84	98	156
Sutton, West ..	35	25	103	90	18	48	120	96	130	28
Parr .. ..	39	35	121	96	66	68	75	109	160	108
Totals ..	342	222	1310	914	385	335	580	719	1224	728



Scarlet Fever is a disease which is stated to recur in an epidemic form at somewhat regular intervals, the maximum being reached about every five years. The table on page 35 seems to bear this out, for the last maximum occurred in 1896, when 1,310 cases were notified. From that point the prevalence of the disease gradually dropped till in 1899 it reached its minimum. From that point it began once more gradually to ascend. There can be no doubt that but for efficient isolation the rise of the curve would have been much more rapid. As it was, it took three years to reach its maximum and it was not till 1902 that the notifications approached the number of 1896. During the past year the number dropped to nearly one-half.

Passing next to the table showing the seasonal incidence of the disease, it will be seen that the maximum occurred in January, after which a gradual decline took place to a minimum in August. After this a second maximum was reached in October.

Referring next to the distribution of the disease, it will be noted that the heaviest incidence fell on North Windle and East Sutton. Parr and North Eccleston also had very numerous cases. Next in numbers came Hardshaw, with Central considerably lowest, and it is at least a curious fact that the most crowded ward contributed the fewest number of cases. On examining the table it will be found that this has been the case in more than one year. What the explanation of this fact is, it is almost impossible to say.

Of the 728 cases which occurred, it was found possible to isolate 476 or 65.4%, which, considering the number of cases, may be considered a very satisfactory proportion.

The main causes of the past epidemic are probably two in number.

1. Insufficient isolation accommodation at the Borough Sanatorium and the consequent impossibility of removing to hospital many cases which it would undoubtedly have been advisable to admit. Indeed the number of second and third cases which occurred were, undoubtedly, due to this cause.
2. The extreme mildness of many of the cases. Thus a doctor was often not called in until a second case had occurred, and by that time much mischief might have been done. In one case in particular a boy attended school for some days after the onset of the disease, and from this one case no less than 12 others were attributable. Among minor causes may be mentioned the Schools, which in some small degree seem to have aided the spread of the disease. In no instance was there shown to be sufficient cause to occasion the closure of a School.

No cases were traceable to milk.

The 728 cases occurred in 629 houses as follows :—

In 559 houses only one case occurred, being 76·8% of the cases.

„ 49 „ two cases occurred.

„ 15 „ three „ „

„ 5 „ four „ „

„ 1 „ six „ „

A much smaller proportion of second cases occurred than during 1902.

In the 629 houses in which the disease occurred there were 1,032 children under 12 years of age, who were said not to have had Scarlet Fever previously, and who did not contract it during the year. This would seem to show, as indeed one's experience confirms, that reasonable care is taken in a large proportion of the houses to prevent the spread of the disease.

The precautions adopted to prevent the spread of Scarlet Fever were the same as in former years, and comprised (1) Visit of Sanitary Inspector; (2) removal to Hospital; (3) Disinfection and Supply of Disinfectants, &c.; (4) Exclusion from School of all children from infected households.

#### **HOSPITAL RETURN CASES OF SCARLET FEVER.**

By this term is meant those cases of Scarlet Fever which occur in a house after the return home of cases from Hospital. The term is usually limited to those cases which occur within seven days after the discharge of the patient.

Their causation has been the reason of much speculation and research. It has been suggested that they are due (1) to the retention in the cavities of the nose of certain infective material in spite of the fact that all peeling and all discharge from nose and ears have ceased, and that the greatest care has been taken; (2) that some article of clothing worn by the patient before entering hospital which had been put away and escaped disinfection, was brought out on the patient's return home; (3) the occurrence of secondary peeling; (4) secondary discharge from nose or ear.

It is probable that all these causes are sometimes factors in the causation of return cases, but the two former are probably by far the most common.

The number of return cases are so small annually as not seriously to militate against the use of a hospital for isolation purposes. Their number might doubtless be limited by removing cases on their convalescence to a convalescent ward and allowing them to remain there a couple of weeks before discharging them. With the new blocks now erected it will be possible to pursue this course.

During 1903, 10 cases occurred in houses within seven days of the return of other cases from hospital.

The lesson of the epidemic is undoubtedly the necessity for increased hospital accommodation, and it is satisfactory to note that much progress had been made in this direction.

One prosecution for exposure of a scarlet fever patient was undertaken during the year.



DIPHThERIA.

The death-rate from this disease was 0·26 per 1000 of the population of St. Helens during 1903. In England and Wales it was 0·18 for the same period.

The following Table shows the cases of sickness per annum, the deaths, the death-rate per 1000, and the case mortality,—

Year.	1894	1895	*1896	*1897	1898	1899	*1900	*1901	*1902	1903
Cases of Sickness.	86	66	72	66	60	64	77	85	93	126
Deaths .. ..	9	8	17	20	16	15	19	33	20	23
Death-rate per 1000... ..	·11	·10	·20	·24	·18	·17	·21	·38	·23	·26
Mortality per 100 Cases ...	10·4	12·1	23·6	30·3	26·6	23·4	24·6	38·8	21·50	18·25

\* Years in which Scarlet Fever was epidemic.

The following Table shows the periods of greatest prevalence o Diphtheria during the past six years in St. Helens :—

SEASONAL INCIDENCE.

YEAR.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
1898	8	8	4	3	4	2	6	6	4	3	5	7	60
1899	7	3	5	3	7	4	1	3	5	9	10	7	64
1900	5	6	9	7	5	3	3	10	4	6	8	11	77
1901	10	12	9	8	4	4	4	5	3	12	10	4	85
1902	5	8	9	14	5	5	9	0	6	13	10	9	93
1903	11	9	6	13	10	10	11	9	12	11	18	6	126



DISTRIBUTION OF CASES OF SICKNESS FROM DIPHTHERIA AND  
MEMBRANOUS CROUP.

WARDS.	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	Total.
Eccleston, North	7	10	6	9	4	9	6	6	8	<b>13</b>	78
Eccleston, South	8	5	1	4	4	1	10	11	7	<b>9</b>	60
Central ... ..	5	3	6	4	4	3	8	3	1	<b>4</b>	41
Windle, North ...	20	13	12	6	8	2	12	12	14	<b>28</b>	127
Windle, South ..	3	6	9	6	2	3	2	8	6	<b>15</b>	60
Hardshaw ... ..	9	10	12	14	10	14	4	12	16	<b>27</b>	128
Sutton, East ...	9	4	6	9	10	14	14	8	11	<b>12</b>	97
Sutton, West ...	10	6	10	3	5	3	6	11	7	<b>7</b>	68
Parr ... ..	15	9	10	11	13	15	15	14	23	<b>11</b>	136
Totals	86	66	72	66	60	64	77	85	93	<b>126</b>	795

The number of notified cases and the percentage mortality at each age group was as follows:—

Age.	Number of Cases, 1903.	Percentage Mortality.
Under 1 year ... ..	6	83%
1 and under 5 ... ..	37	27%
5     ,,     10 ... ..	43	16·3%
10 and upwards ... ..	40	2·5%

From the foregoing tables it will be noted that diphtheria was more prevalent than it has been in any of the ten preceding years. Although this was so, it was not so fatal as in either of the seven previous years. In no case was it possible to trace the infection from a previous case, as cases occurring within a few days of each other were nearly always found to be situated in parts of the borough widely separate one from the other. It must, of course, be borne in mind, that scarlet fever was epidemic during the year, and that some of the cases notified as diphtheria may have been cases of malignant scarlet fever. It is further to be noted that dampness, which is so favourable to the spread of this disease, was extremely frequent throughout the year.

In addition, the drains of the houses where diphtheria occurred were in every case tested, and in 39% defects were found.

The greatest prevalence of the disease occurred in April and November, though the cases were fairly evenly distributed,

Taking the total cases occurring in each ward during the past ten years, it will be seen that this disease is by far the most prevalent in Parr, Hardshaw, and North Windle, while the comparative immunity of Central is again remarkable.

It was not found possible to isolate more than 3 cases in the sanatorium, but again a supply of anti-toxin for use among the poorer class of patients was kept. This was extensively used by the medical men in the town, and was undoubtedly of great service. Unfortunately, however, the doctor was called in too late in many cases to use this valuable remedy with any chance of success. When employed on the first, second, or third day of the disease, its effect is often marvellous. Later than this, however, its effect is greatly diminished.

With the increased accommodation provided at the Sanatorium, it will now be possible to isolate a large proportion of the cases, and consequently the death-rate should be greatly diminished.

The work commenced in 1893 of aiding the Medical Attendant in diagnosing doubtful cases by the bacteriological examination of a piece of membrane, or of a swabbing from the throat, was continued during the year. It frequently proved of service.

WHOOPING COUGH.

This disease caused **30** deaths during the year, equal to a death-rate of **0·34** per 1000, as against 0·20 per 1000 for the preceding year.

In England and Wales the rate was 0·27 per 1000 during 1903.

In former years the deaths from this disease were as follows :—

1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903
18	61	14	78	33	34	41	56	17	18	<b>30</b>

The deaths were all of children under 5 years of age, and were as follows :—

0 to 3 months	...	...	...	3
3 „ 6 „	...	...	...	3
6 „ 12 „	...	...	...	11
1 „ 2 years	...	...	...	8
2 „ 3 „	...	...	...	3
3 „ 4 „	...	...	...	2

The cases were distributed over the Borough as follows :—

Eccleston, North	...	...	9
Eccleston, South	...	...	1
Central	...	...	1
Windle, North	...	...	—
Windle, South	...	...	—
Hardshaw	...	...	5
Sutton, East	...	...	6
Sutton, West	...	...	4
Parr	...	...	4

The number of deaths in each Quarter of this highly infectious disease was as follows :—

6 deaths occurred in the 1st Quarter.				
12	„	„	„	2nd „
5	„	„	„	3rd „
7	„	„	„	4th „

At the present time practically nothing is done in St. Helens or in other towns to reduce the mortality and the serious damage to health which this disease causes. There are features in the natural history of the disease which render the usual preventive measures unavailable to a large extent. When children suffering from this disease are everywhere allowed to go about in public places, it is not to be wondered at that so many cases occur.



## TYPHOID FEVER.

The death-rate from Typhoid Fever was at the rate of **0·20** per 1000, being 0·23 below the mean for the previous 10 years. In England and Wales the rate was 0·12 per 1000.

The number of cases of sickness from this disease notified was **76** being 5 below the number reported last year, and 102 below the mean number reported annually since 1892. The case-mortality is 23·7 against 20·7 and 30·8 in the two preceding years.

The following Table shows the number of cases of sickness and the death-rates from Typhoid Fever in each year since 1883:—

Year.	No. of cases of Sickness.	Death Rate.	Fatality %	Year.	No. of Cases of Sickness.	Death Rate per 1000.	Fatality %
1883	No. of Cases not known.	·51	—	1893	315	·68	16·3
1884		·53	—	1894	172	·33	14·2
1885		·11	—	1895	257	·74	22·6
1886		·43	—	1896	166	·49	23·8
1887		·51	—	1897	147	·39	22·4
1888		·32	—	1898	136	·36	22·6
1889	—	1·18	14·5	1899	221	·49	19·4
1890	558	·34	18·0	1900	123	·21	15·4
1891	150	·36	13·9	1901	164	·40	20·7
1892	138	·34	17·8	1902	81	·29	30·8
Mean.	257	·46	16·0	Mean.	178	·43	20·8
<b>1903</b> ...    ...    ...				<b>76</b> <b>·20</b> <b>23·7</b>			

The following Table shows the distribution of deaths in St. Helens during the past 14 years:—

WARDS.	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	<b>1903</b>	Total.
Eccleston, North	6	—	1	4	2	6	4	3	4	2	—	—	1	—	36
Eccleston, South	4	2	3	5	3	5	2	1	—	2	1	1	1	—	33
Central .. ..	3	4	1	2	2	2	3	—	3	—	1	3	2	—	27
Windle, North..	2	3	—	6	2	3	7	4	1	1	2	3	2	<b>1</b>	39
Windle, South..	2	1	5	2	—	3	3	—	2	2	—	1	—	<b>1</b>	28
Hardshaw ..	3	2	2	4	5	1	4	3	2	2	—	1	1	—	34
Sutton, East ..	2	1	3	3	1	2	2	—	—	—	—	2	2	—	23
Sutton, West ..	2	12	6	18	10	34	10	20	16	29	14	22	15	<b>15</b>	228
Parr .. ..	—	1	4	8	1	3	5	2	2	5	1	1	1	<b>1</b>	39
Totals ..	24	26	25	52	26	59	40	33	30	43	19	34	25	<b>18</b>	487

\*Including Deaths in the Sanatorium

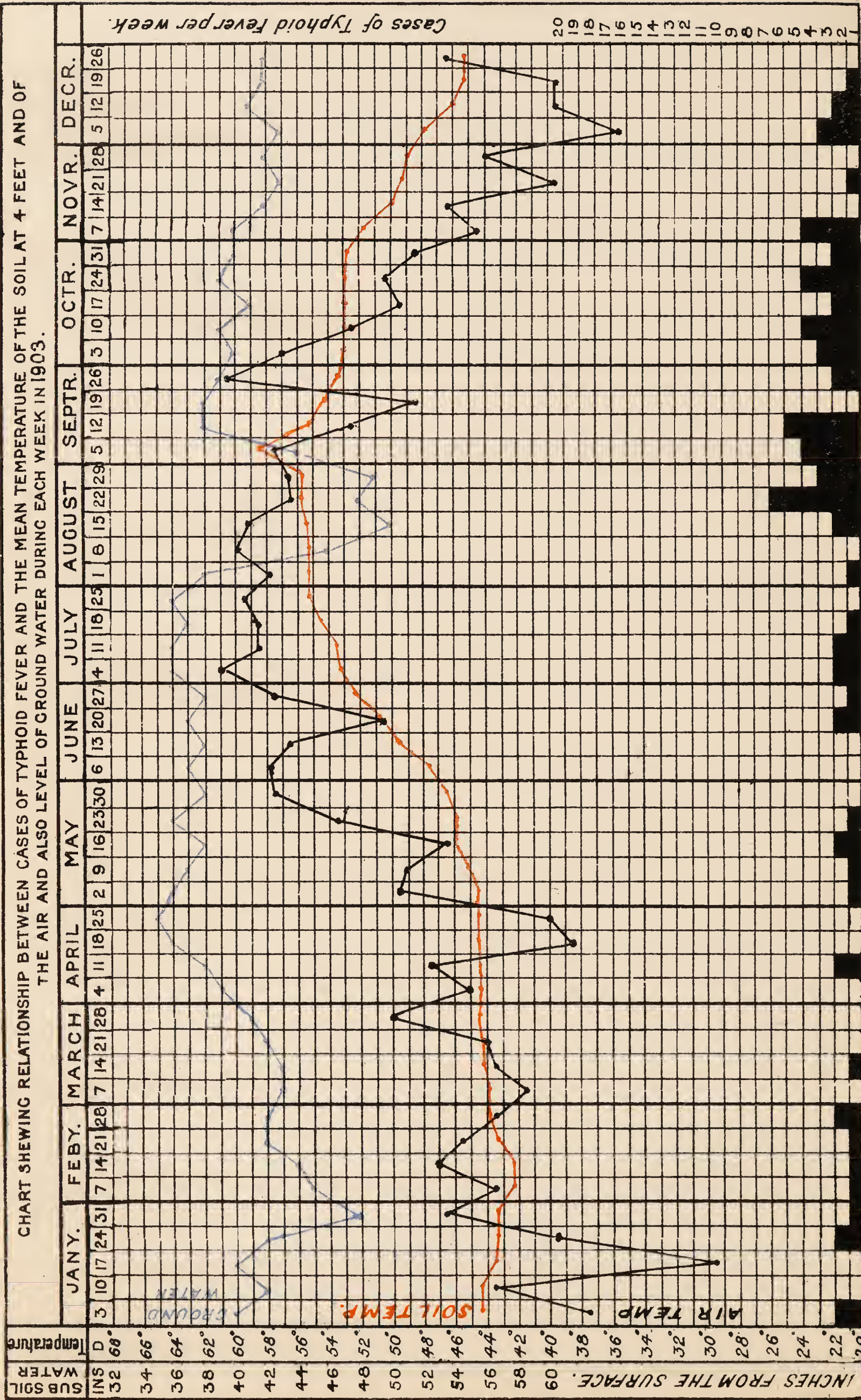
It will be noted how large a proportion of the deaths since 1893 have occurred in West Sutton. This increase is coincident with the greatly increased facilities for isolation provided at the Sanatorium and the greater proportion of cases isolated there.





CHART No. 2.

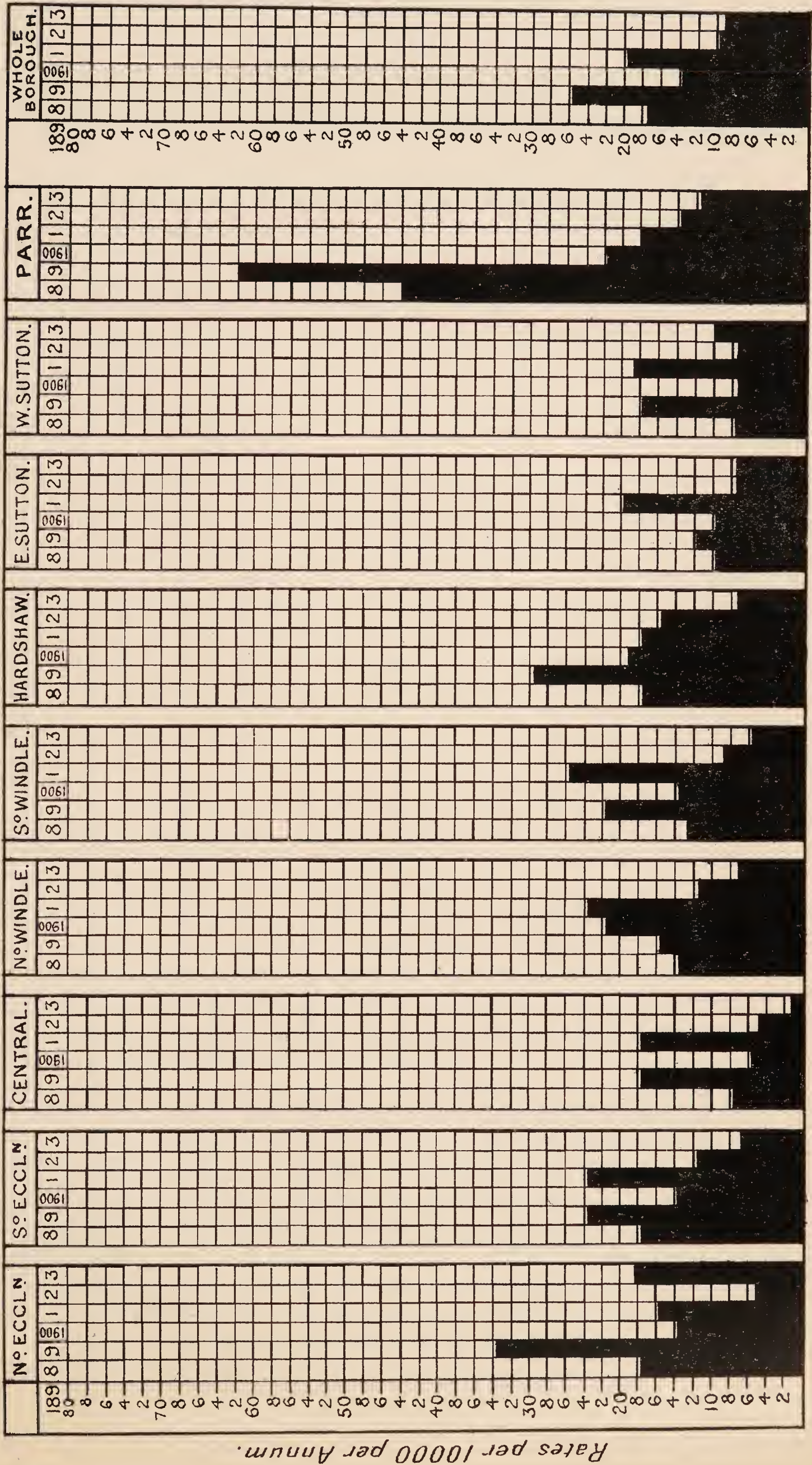
CHART SHEWING RELATIONSHIP BETWEEN CASES OF TYPHOID FEVER AND THE MEAN TEMPERATURE OF THE SOIL AT 4 FEET AND OF THE AIR AND ALSO LEVEL OF GROUND WATER DURING EACH WEEK IN 1903.





TYPHOID SICKNESS, ( ST HELENS 1898 TO 1903, INCL. )

CHART N° 3.







It will be noted that in 1903 the greatest number of deaths occurred in the third and fourth quarters.

Year.	Deaths 1st Qtr.	Deaths 2nd Qtr.	Deaths 3rd Qtr.	Deaths 4th Qtr.	Total
1894	13	2	4	7	26
1895	12	2	19	26	59
1896	4	5	15	16	40
18 7	3	4	16	10	33
1898	5	3	12	10	30
1899	11	3	21	8	43
1900	2	3	7	7	19
1901	5	1	18	10	34
1902	7	12	2	4	25
<b>1903</b>	<b>3</b>	<b>2</b>	<b>4</b>	<b>9</b>	<b>18</b>
Totals.	65	37	118	107	327

The distribution of Typhoid Fever is shown in the accompanying Table, where also the number of cases occurring in each of the months of the preceding 10 years is set out. It will be noted that the largest number of cases occurred in the month of September and October.

Year.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1893	10	11	18	0	3	10	26	41	73	70	34	19	315
1894	19	11	18	9	6	5	15	17	25	24	11	12	172
1895	9	9	10	2	9	9	12	37	42	43	53	22	257
1896	9	9	7	2	8	7	17	21	34	22	24	8	168
1897	6	11	7	4	5	4	2	43	27	15	18	5	147
1898	6	4	8	7	4	6	7	10	27	32	16	9	136
1899	11	9	9	9	5	6	11	21	80	39	11	10	221
1900	10	1	4	9	7	6	5	24	27	13	13	4	123
1901	4	5	8	8	3	2	11	30	44	23	11	15	164
1902	8	12	4	8	5	3	5	4	12	8	6	6	81
<b>1903</b>	<b>3</b>	<b>5</b>	<b>2</b>	<b>4</b>	<b>3</b>	<b>6</b>	<b>4</b>	<b>11</b>	<b>13</b>	<b>12</b>	<b>5</b>	<b>8</b>	<b>76</b>
1st Qtr. 1903				2nd Qtr. 1903			3rd Qtr. 1903			4th Qtr. 1903			
<b>10</b>				<b>13</b>			<b>28</b>			<b>25</b>			

The following Table shows the distribution of the Notified cases over the Borough during each of the last 11 years:—

Wards.	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	Average.	1903
Eccleston, North ..	36	21	68	22	18	17	34	14	15	5	25	<b>20</b>
Eccleston, South ..	22	17	25	18	7	15	20	11	19	11	17	<b>6</b>
Central ..	19	16	27	14	13	7	15	5	16	3	14	<b>1</b>
Windle, North ..	51	29	26	34	40	13	14	22	20	14	28	<b>8</b>
Windle South ..	40	12	24	19	9	11	20	13	24	7	19	<b>5</b>
Hardshaw ..	57	22	23	10	16	16	31	20	19	15	23	<b>7</b>
Sutton, East ..	10	26	8	5	5	9	11	9	18	6	11	<b>7</b>
Sutton, West ..	33	10	43	20	21	7	16	7	16	6	18	<b>10</b>
Parr ..	47	19	13	20	18	41	60	22	17	14	27	<b>12</b>
Whole Borough ..	315	172	257	168	147	136	221	123	164	81	178	<b>76</b>



The sickness rates per 1000 of the population in each Ward for the 10 years—1893 to 1903—as well as the average for the previous 10 years are set out in the following Table :—

SICKNESS RATES PER 1000 OF THE POPULATION IN EACH WARD.

WARDS.	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	Ave. 10 yrs.	1903
Eccleston, North..	4 07	2'28	7'17	2'29	1'83	1'69	3'22	1'34	1'49	0'46	2'58	<b>1'81</b>
Eccleston, South..	3'09	2'29	3'37	2'19	0'83	1'75	2'28	1'23	2'38	1'18	2'06	<b>0'63</b>
Central ..	2'29	1'92	3'24	1'68	1'52	0'80	1'68	0'55	1'66	0'42	1'47	<b>0'13</b>
Windle, North ..	7'57	3'74	2'97	3'71	4'27	1'36	1'43	2'20	2'28	1'18	3'07	<b>0'66</b>
Windle, South ..	4 67	1'39	2'78	2'18	1'01	1'21	2'15	1'37	2'43	0'84	2'00	<b>0'59</b>
Hardshaw ..	5'85	2'23	2'30	1'59	1'55	1'52	2'88	1'82	1'75	1'53	2'30	<b>0'70</b>
Sutton, East ..	1'23	3'03	'85	'55	'53	'94	1'13	0'91	1'86	0'67	1'17	<b>0'77</b>
Sutton, West ..	3'93	1'18	5'03	2'27	2'44	'76	1'70	0'73	1'84	0'61	1'95	<b>1'00</b>
Parr ..	5'46	2'16	1'45	2'15	1'89	4'23	6'06	2'17	1'80	1'36	2'87	<b>1'14</b>
Whole Borough ..	4'20	2'23	3'23	2'07	1'78	1'60	2'55	1'37	1'93	0'94	2'19	<b>0'86</b>

During 1903 the chief incidence of the disease was manifested in North Eccleston, West Sutton, and Parr.

The following Table shows the ages at which the various cases of Sickness and Death from Typhoid Fever occurred :—

	Under 5 Years.	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	Over 55	Total.
Cases of Sickness ..	4	19	22	16	9	2	4	76
Deaths ..	3	3	4	6	1	1	—	18
Percentage Mortality <b>1903</b> ..	<b>75'0</b>	<b>15'8</b>	<b>18'1</b>	<b>35'0</b>	<b>1'1</b>	<b>50'0</b>	—	<b>23'7</b>
Do. 1902..	50'0	23'8	10'0	62'5	16'6	6'66	100	30'8
Do. 1901..	0'0	11'9	24'5	19'3	42'8	17 6	33'3	20'7
Do. 1900..	20'0	8'1	13'0	22'2	11'1	0'0	100'0	15'4
Do. 1899..	27'2	15'5	16'1	15'4	30'0	20'0	62'5	19'4
Do. 1898..	18'1	2'7	23'6	25'0	43'7	75'0	33'3	22'0

I have been enabled, by the courtesy of the various Medical Officers of Health, to obtain the following figures.

Table showing the number of cases of Enteric Fever and the rate per 1000 of the population in several large towns and in St. Helens:—

TOWN.	No. of Cases of Typhoid Fever notified.	Sickness— Rate per 1000 of the population.	TOWN.	No. of Cases of Typhoid Fever notified.	Sickness— Rate per 1000 of the population.
London ... ..	2339	·51	Leeds ... ..	358	·80
West Ham ... ..	237	·84	Sheffield ... ..	345	·88
Croydon ... ..	32	·22	Hull ... ..	97	·36
Portsmouth ... ..	219	1·12	Sunderland ... ..	122	·81
Plymouth ... ..	75	·67	Gateshead ... ..	25	·21
Bristol ... ..	134	·39	Newcastle ... ..	77	·34
Cardiff ... ..	100	·57	South Shields ... ..	58	·55
Swansea ... ..	85	·88	Northampton ... ..	25	·28
Wolverhampton ... ..	71	·73	Rhondda Urban } ... ..	275	2·2
Birmingham ... ..	348	·65	Dist. Ystradyfodwg } ... ..		
Norwich ... ..	92	·80	Middlesborough ... ..	81	·23
Leicester ... ..	58	·26	Southampton ... ..	148	1·34
Nottingham .. ..	200	·80	Aston Manor ... ..	77	·96
Derby ... ..	62	·53	Coventry ... ..	15	·20
Birkenhead ... ..	75	·66	Newport (Mon.) .. ..	35	·50
Liverpool ... ..	681	·95	Stockport ... ..	34	·35
Bolton ... ..	178	1·02	Rochdale ... ..	31	·36
Manchester ... ..	387	·70	Bootle ... ..	61	1·20
Salford ... ..	178	·80	Wigan ... ..	51	·81
Oldham ... ..	52	·37	Warrington ... ..	20	·20
Burnley ... ..	41	·41	Barrow ... ..	58	·89
Blackburn ... ..	97	·70	Bury ... ..	37	·63
Preston ... ..	139	1·21	West Bromwich ... ..	63	·94
Huddersfield ... ..	37	·39	Hanley ... ..	38	·93
Halifax ... ..	61	·57	Dudley ... ..	59	·76
Bradford ... ..	275	·97	<b>St. Helens</b> ... ..	76	·86

It will be seen that in 14 of the towns set out above a higher rate occurred than in St. Helens, while 37 had a lower rate, a most marked improvement on past years.



In last year's report, it was remarked that 1902 might be regarded as a red letter year for St. Helens as regards the prevalence of Enteric Fever. The year 1903 has, however, surpassed even that record year. Only 76 cases were notified during the year, being 102 below the average of the previous ten years and 5 below the previous lowest year. The type of the disease also was not so virulent. This continued, if gradual, reduction in the number of cases occurring annually, would appear to indicate that the Health Committee are working on the right lines.

As in previous years, a large proportion of the cases occurred in privy-midden houses, as many as 45, or 59 per cent. being so found. Twenty-nine per cent. of the cases were found in houses served with pails, whilst only 12 per cent. occurred in water closet houses. Defective drains were also found in a large proportion of the cases, and there can be little doubt that the pollution of the subsoil with excremental matter containing the specific organism is mainly responsible for the prevalence of Enteric Fever in St. Helens. No case was traceable to milk or water.

Chart No. 2 is appended—as in former years—to show the weekly number of cases of Enteric Fever, the temperature of the soil at four feet, the mean temperature of the air and the level of the subsoil water in inches from the surface. The relationship between the temperature of the soil and the prevalence of Enteric Fever, is seen in the maximum which occurred in August and September when the cases increased as the temperature reached 56°F. More striking however in the past year is the relationship between the prevalence of the disease, and a high level of the subsoil water. The maximum in August and September coincided with a sudden rise in the level of the subsoil water.

Chart No. 3 shows graphically the Enteric Fever rates for each Ward and also for the whole Borough for the years 1893-1903. The usual spot map is appended showing the distribution of cases during 1903.

By reference to Chart No. 3, to the spot map, and to the more extended figures to be found on page 50, the distribution of Enteric Fever in the Borough since 1893 will be seen. It will be noted that in every ward the rate was considerably below the average of the past ten years, while the total rate was only about one third of the average. The highest rates occurred in North Eccleston and Parr. The rate in Parr this year shows a further diminution. When the sewage scheme for Sutton and Parr becomes an accomplished fact, there is little doubt that the reduction of cases in the latter ward will be still more marked. It is satisfactory to note that some progress has been made with this scheme.

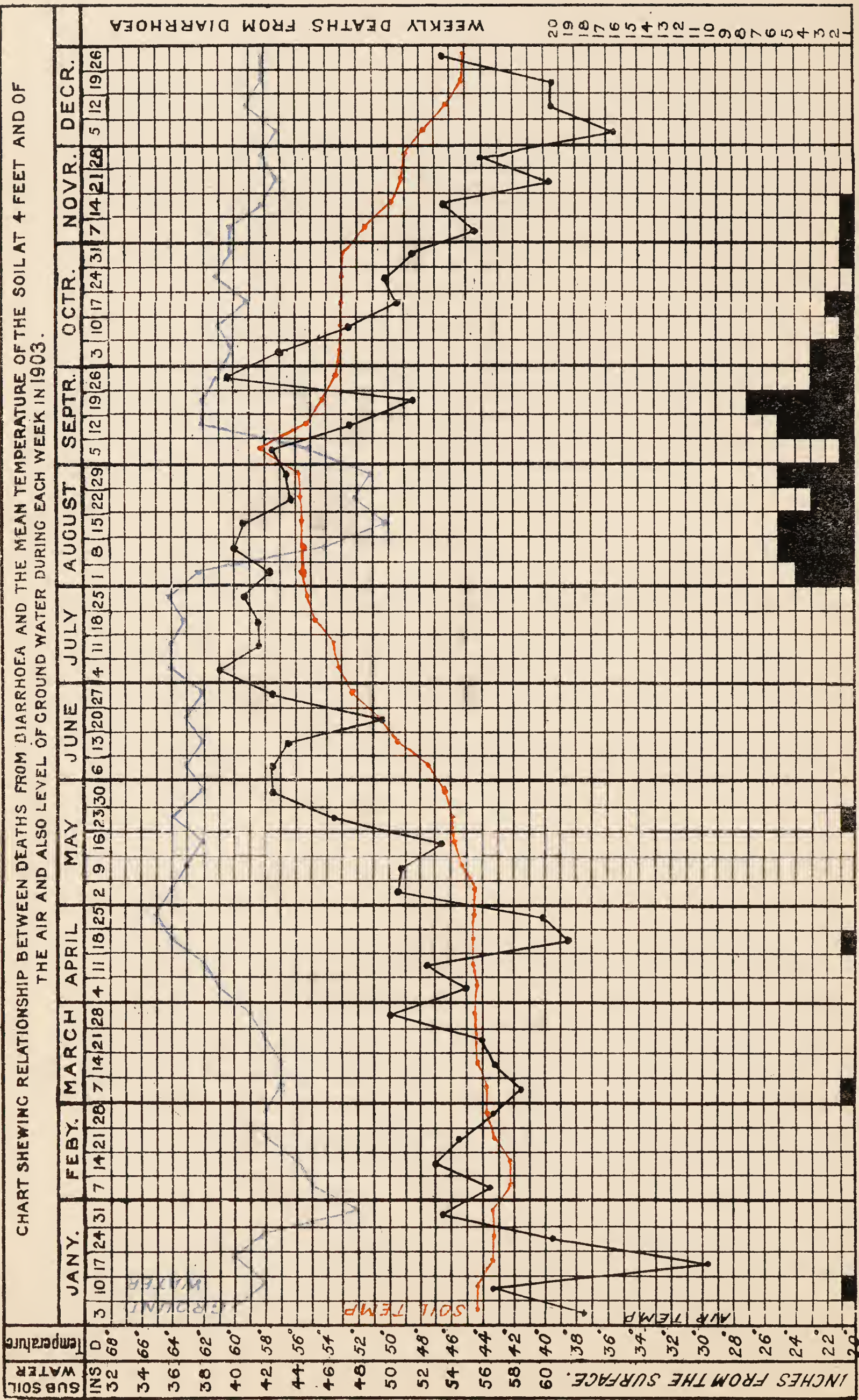
During the year the Inspector appointed to test drains did much valuable work, which cannot but react favourably on the health of the Borough, especially in reducing the number of Enteric Fever cases. A summary of the work done by him during the year will be found on page 97.





CHART No. 4.

CHART SHEWING RELATIONSHIP BETWEEN DEATHS FROM DIARRHOEA AND THE MEAN TEMPERATURE OF THE SOIL AT 4 FEET AND OF THE AIR AND ALSO LEVEL OF GROUND WATER DURING EACH WEEK IN 1903.





Of the 76 cases notified, 59, or 77·6 per cent. were removed to hospital, as against 72·0 per cent. in the previous year. This is a most satisfactory result.

The precautions adopted to prevent the spread of the disease were the same as in former years, namely (1) enquiry as to origin of case and the existence of insanitary conditions in the house; (2) the removal, by means of special pails, of all infective and infected material, twice or thrice weekly; (3) the supply of disinfectants twice a week, and the final disinfection of the premises; and (4) the removal of the patient, when practicable to hospital.

The diagnosis of Enteric Fever by the serum test was extensively employed during 1903, almost every case notified, besides numerous other doubtful cases, being examined. It was often found of great value in confirming the clinical diagnosis.

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## DIARRHŒA.

The disease which is treated of under this head is commonly known as Epidemic, Zymotic or Summer Diarrhœa. It occurs principally in children. It owes its origin to a microbe or series of microbes, the organisms growing most freely in an organically polluted soil. The infection is probably conveyed in the food, and improper feeding prepares the way for the reception and growth of the microbe. This disease is particularly fatal in young children, especially those who are bottle-fed. In 1903 53 deaths occurred as against 50 in 1902, 97 in 1901, and an average of 103 in the previous ten years.

The death-rate from diarrhœa in St. Helens during 1903 was at the rate of 0·60 per 1000 per annum as against 0·58 in 1902. In England and Wales the death-rate was 0·50 per 1000.



In the following table are placed, side by side, certain statistics relating to Diarrhoea and Typhoid Fever, and also certain meteorological statistics. It will be noted that the death-rates from Diarrhoea have fluctuated very considerably from year to year.

YEAR.	Total Deaths from Diarrhoea.	Total Deaths from Typhoid and Continued Fever.	Death Rate from Diarrhoea per 1,000.	Death Rate from Typhoid & Continued Fever per 1,000.	Death Rate from Diarrhoea in England and Wales.	Mean Temperature of the Air for the year.	Rainfall at Eccleston Hill (Total ins.).
1873	79	24	1.65	.50	.96	48.2	24.9
1874	110	25	2.25	.51	.92	48.6	27.8
1875	101	65	2.02	1.30	1.02	48.4	30.1
1876	86	40	1.69	.78	.91	48.4	36.3
1877	74	34	1.41	1.46	.61	48.3	41.7
1878	132	40	2.45	.74	1.00	48.5	35.5
1879	52	34	.94	.61	.45	45.5	24.3
1880	130	40	2.30	.70	1.17	48.2	29.7
1881	76	56	1.31	.97	.55	46.9	36.7
1882	85	33	2.12	.55	.65	48.5	39.7
1883	69	31	.89	.51	.59	48.0	34.8
1884	131	33	2.12	.53	.27	49.2	26.9
1885	56	7	.89	.11	.49	46.9	32.7
1886	122	28	3.01	.43	.89	47.3	33.0
1887	101	34	1.53	.51	.72	47.0	21.1
1888	65	22	.96	.32	.45	46.7	28.1
1889	85	81	1.27	1.18	.64	47.8	25.8
1890	74	24	1.05	.34	.60	47.8	27.0
1891	78	26	1.08	.36	.46	47.2	32.3
1892	84	25	1.14	.34	.50	46.6	34.8
1893	168	52	2.20	.68	.95	50.1	25.7
1894	35	26	.48	.33	.35	48.9	33.3
1895	101	59	1.27	.74	.88	47.3	28.0
1896	63	40	.77	.49	.56	48.7	31.8
1897	133	33	1.60	.39	.85	48.6	34.0
1898	140	31	1.65	.36	.95	49.7	28.9
1899	114	43	1.31	.49	.98	49.1	30.0
1900	91	19	1.02	.21	.69	49.1	29.59
1901	97	34	1.14	.40	.91	48.5	25.55
1902	50	25	.58	.29	.37	47.6	24.21
<b>1903</b>	<b>53</b>	<b>18</b>	<b>.60</b>	<b>.20</b>	<b>.50</b>	<b>48.9</b>	<b>39.34</b>

As in former years by far the larger number of deaths occurred during the 3rd Quarter as is seen below :—

DEATHS IN ST. HELENS FROM DIARRHŒA.

	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	Mean of 10 years	1903
January ...	1	0	0	1	2	0	1	1	1	0		<b>3</b>
February ...	0	0	0	0	1	0	2	0	0	0		<b>0</b>
March ...	2	2	0	0	0	1	0	2	0	1		<b>0</b>
1st Quarter ...	3	2	0	1	3	1	3	3	1	1	1·8	<b>3</b>
April ...	1	0	1	3	0	0	0	2	0	1		<b>1</b>
May ...	5	0	1	2	2	2	0	0	1	1		<b>1</b>
June ...	32	0	4	6	3	4	0	2	2	3		<b>0</b>
2nd Quarter...	38	0	6	11	5	6	0	4	3	5	7·8	<b>2</b>
July ...	71	5	29	22	13	16	28	13	33	0		<b>3</b>
August ...	32	14	39	15	79	54	47	42	50	5		<b>19</b>
September...	21	7	12	9	25	51	29	23	7	26		<b>16</b>
3rd Quarter ...	124	26	80	46	117	121	104	78	90	31	81·7	<b>38</b>
October ...	2	8	12	3	3	9	5	4	1	8		<b>7</b>
November ...	1	1	3	1	4	3	1	1	1	3		<b>3</b>
December ...	0	1	0	1	1	0	1	1	1	2		<b>0</b>
4th Quarter...	3	10	15	5	8	12	7	6	3	13	8·2	<b>10</b>
Total each y'r	168	38	101	63	133	140	114	91	97	50	99·5	<b>53</b>

On reference to the table on page 55 it will be seen that during the last thirty-one years, on only two occasions, namely 1894 and 1902, has a lower death-rate been recorded. Undoubtedly the meteorological conditions were unfavourable to the spread of this disease, still the result is none the less satisfactory.

As heretofore every birth in the Borough was visited by the Female Sanitary Inspectors and advice was given with regard to the feeding of infants and a leaflet on the subject was left. It is a matter for regret that the Infant Milk Depôt was not more extensively used. Possibly the teaching of children in the elementary schools as to the rearing of infants would have a beneficial effect.

As regards the distribution of Deaths in the various wards, it will be seen that in each case, the number occurring was below the average of the past ten years. In no case was there any marked preponderance. East Sutton was, however, easily lowest.

The following Wards in which the cases occurred are shewn in the following table:—

WARDS.	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	Avege 10 years	1903
Eccleston, N.	32	9	18	10	23	36	16	20	10	6	17·9	<b>7</b>
Eccleston, S.	14	4	7	5	16	6	10	9	9	3	8·3	<b>7</b>
Central ...	20	2	18	10	10	18	16	16	9	2	12·1	<b>7</b>
Windle, N....	8	2	9	5	16	13	9	10	9	4	8·5	<b>8</b>
Windle, S....	29	5	11	8	17	16	14	8	24	10	14·2	<b>4</b>
Hardshaw ...	12	5	11	13	16	11	15	10	15	9	11·7	<b>4</b>
Sutton, E....	8	4	5	2	11	7	8	5	4	4	5·8	<b>2</b>
Sutton, W....	23	3	11	5	14	15	9	3	7	5	9·5	<b>6</b>
Parr ...	22	4	11	5	10	18	17	10	10	7	11·4	<b>8</b>
Total ...	168	38	101	63	133	140	114	91	97	50	99·5	<b>53</b>

The ages at death of the 53 persons who died of Diarrhœa during 1903 are shown in the following Table, as well as the similar returns for the eight previous years.

AGE.	1895	1896	1897	1898	1899	1900	1901	1902	1903	Total
0 to 3 months	19	7	15	13	7	17	13	6	<b>8</b>	113
3 „ 6 „ ...	19	16	24	36	28	23	30	8	<b>16</b>	205
6 „ 12 „ ...	26	23	46	41	27	27	34	16	<b>11</b>	268
1 „ 2 years...	33	7	26	31	26	11	13	9	<b>11</b>	171
2 „ 3 „ ...	2	2	4	6	3	3	2	4	—	26
3 „ 4 „ ...	—	1	6	4	3	—	1	2	—	17
4 „ 5 „ ...	1	—	1	—	—	1	3	—	<b>1</b>	7
Over 5 „ ...	1	7	11	9	20	8	1	5	<b>6</b>	72
Totals ...	101	63	133	140	114	91	97	50	<b>53</b>	880



Out of the 880 persons who died during these nine years, over 86 per cent. were under 2 years of age.

Of the 53 persons who died from Diarrhœa during 1903, 8 were under 3 months, and 16 between 3 and 6 months old.

Particulars were obtained as to the method of feeding these children, and it was again found that the chief incidence of the disease fell on bottle-fed children.

Chart No. 4 is again appended. It shows the weekly number of deaths from Diarrhœa, with the corresponding air temperature and temperature of the soil at 4 feet, together with the level of the subsoil water.

The relationship between the temperature of the soil at 4 feet, and the Diarrhœa Mortality is not so marked as in former years.

Diarrhœa began to be epidemic in the first week in August, the soil temperature reaching  $54^{\circ}$  (the critical point) during the last week of July. The maximum was reached in the third week in September, the soil temperature reaching its maximum in the first week. After this the diarrhœa mortality rapidly declined.

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## MINOR ZYMOTICS.

### INFLUENZA.

Ten deaths only were due to this disease in 1903. All of these, with one exception, were of persons between 25 and 85 years of age. In the previous years the deaths were :—

YEAR.	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903
Deaths from Influenza }	19	3	7	8	7	17	13	19	33	16	6	<b>10</b>

It will be noted that the number of deaths in 1903 is slightly higher than that which occurred in 1902, but is lower than the average of the previous 11 years.

### ERYSIPELAS.

There was no death registered among the **61** cases of sickness from this disease which were notified during the year.

The cases of sickness were distributed over the Borough as follows :—

WARDS.	1895	1896	1897	1898	1899	1900	1901	1902	1903	Totals.
Eccleston, North	6	9	14	17	6	15	14	12	<b>10</b>	111
Eccleston, South ...	5	9	7	4	5	9	6	5	<b>1</b>	57
Central .. ..	3	6	17	13	10	11	7	10	<b>3</b>	82
Windle, North ...	12	15	11	12	12	11	17	13	<b>5</b>	120
Windle, South ...	3	14	19	10	8	22	3	9	<b>10</b>	91
Hardshaw ...	15	33	30	45	25	8	14	21	<b>3</b>	219
Sutton, East ...	5	18	18	15	17	18	16	7	<b>10</b>	136
Sutton, West ...	6	12	8	7	7	14	8	16	<b>12</b>	91
Parr ...	14	21	38	50	31	31	21	22	<b>7</b>	244
Total cases of Sick- ness ... ..	69	137	162	173	121	138	106	109	<b>61</b>	1151
Total No. of Deaths in each year ...	1	4	3	3	3	2	2	3	<b>0</b>	23

The fatality or case mortality was therefore **nil** during 1903, as against a mean-rate of 2·00 in the previous 9 years.

On account of the industrial occupations of St. Helens, a very large number of minor accidents take place, and it is therefore not surprising that a large number of cases of Erysipelas are notified during the year. By far the majority however of these cases are of a most trivial nature, as shown by the excessively low case-mortality and by the investigations to which every case is subjected. In many cases it is found the patient returns to work within two or three days of the notification being received.

It may be again pointed out that the time seems to have arrived when this disease might be eliminated from the Notification Act. It appears to entail a needless expense and its investigation takes up valuable time which might be more profitably employed.

### PUERPERAL FEVER.

There were 6 cases notified during 1903, as compared with an average of 15·3 during the previous ten years.

The following Table shows the notified cases, deaths and case-mortality during the past eleven years.

	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	Avge.	1903
Cases of Sickness ..	19	26	17	11	19	7	9	15	16	14	15·3	<b>6</b>
Deaths .. ..	10	6	9	7	10	4	8	9	7	4	7·4	<b>0</b>
Case Mortality ..	52·6	23·1	53·0	63·6	52·6	57·1	88·8	60·0	43·7	28·5	52·3	—
*No. of Births to each death .. {	302	480	351	434	319	815	389	416	446	805	475	—

\* This does not include Still Births, Abortions, &c., which are occasionally followed by Puerperal Fever.

From the above Table it will be noted that the case-mortality for the year was nil as against 52·3 in the previous ten years.

This is the best record that the Borough has yet had. When the Midwives Act is in full force it should be possible to make this record permanent.



## CLASS II.—**PARASITIC DISEASES.**

There were no deaths last year in this class, against 0 in 1902, 1 in 1901, 3 in 1900, 0 in 1899, and 2 in 1898.

## CLASS IV.—**CONSTITUTIONAL DISEASES.**

(a)—There were 3 deaths from RHEUMATIC FEVER in 1903, against 8 in 1902, 3 in 1901, 6 in 1900, 6 in 1899, 0 in 1898, 6 in 1897, 6 in 1896, 7 in 1895, 10 in 1894, 6 in 1893, and 8 in 1892.

### (b)—CANCER AND MALIGNANT DISEASES.

The following shows the deaths from this group during the years 1892 to 1903 :—

1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903
23	36	36	42	35	40	44	35	46	31	35	<b>37</b>

Cancer and Malignant new growths in any Organ are included in the above figures. It is probable that the apparent increase since 1892 is due more to methods of classification, and the better recognition of obscure cases than to any real increase of the disease.

### (c)—TUBERCULAR DISEASES.

Under this heading are included Tabes Mesenterica, Tubercular Meningitis, Hydrocephalus, Phthisis, and other Tubercular Diseases.

The following are the number of deaths during each of the past 8 years :—

1896	1897	1898	1899	1900	1901	1902	1903
179	173	162	168	196	158	198	<b>171</b>

The following shows the Distribution of cases :—

WARDS.	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	Ave. of 10 yrs.	1903
Eccleston, North ..	32	16	25	14	25	21	24	24	21	23	22·5	<b>15</b>
Eccleston, South ..	15	9	8	15	12	12	18	19	12	10	13·0	<b>8</b>
Central .. ..	11	12	16	19	20	14	8	22	10	16	14·8	<b>21</b>
Windle, North ..	6	17	19	26	15	18	17	16	20	26	18·0	<b>17</b>
Windle, South ..	13	16	15	11	19	17	16	26	19	17	16·9	<b>11</b>
Hardshaw ..	33	24	26	25	15	19	14	21	12	19	20·8	<b>20</b>
Sutton, East ..	13	15	22	11	15	12	13	11	11	19	14·2	<b>18</b>
Sutton, West ..	24*	39*	33*	36*	42*	35*	43*	43*	43*	47*	38·5	<b>37*</b>
Parr .. ..	13	16	15	22	10	14	15	14	10	21	15·0	<b>24</b>
Totals .. ..	160	164	179	179	173	162	168	196	158	198	183·7	<b>171</b>

\* Including deaths from Tubercular Diseases occurring in Rainhill Asylum.

It will be seen that in 1903 the rate was considerably lower than in the previous year but was higher than that of 1901.

The mortality from Phthisis during 1903 was at the rate of 1·45 per 1000 of the population, as against 1·66, 1·34 and 1·65 in the three preceding years.

At the end of 1899 the Council decided to request the Medical Men of the Borough to notify cases of Phthisis to the Health Department, paying them for so doing the ordinary notification fee. As a result of this 66 cases of Phthisis were notified during 1900, 56 in 1901 and 82 in 1902, and 67 in 1903. Each case was visited and advice given as to the disposal of the sputum, the necessity of ventilation, &c.

As in the two previous years the houses where deaths from Phthisis occurred, were thoroughly disinfected after the death of the sufferer.

### LOCAL DISEASES.

(a) DISEASES OF THE NERVOUS SYSTEM caused 211 deaths; against 211 in 1902, 201 in 1901, 234 in 1900, 215 in 1899, 207 in 1898, 179 in 1897, 191 in 1896, 178 in 1895, 172 in 1894, 191 in 1893, 187 in 1892, and 226 in 1891.

78 of the above 211 deaths were due to "Convulsions." Of these cases 62 were of children under one year of age.

It should be noted that by far the larger number of deaths in this group occurred in the Rainhill Asylum, and therefore have only an indirect bearing on the Health Statistics of the Borough.

(b) DISEASES OF THE RESPIRATORY SYSTEM caused the following number of deaths :—

1896	1897	1898	1899	1900	1901	1902	<b>1903</b>
356	375	332	379	439	326	402	<b>364</b>

The deaths from Bronchitis and Pneumonia are set out in the following Table :—

	1899	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	<b>1903</b>
Bronchitis ..	219	232	300	243	215	154	164	171	186	169	213	219	163	214	<b>189</b>
Pneumonia ..	133	172	218	141	147	118	118	154	167	145	130	192	133	156	<b>149</b>



The following figures show the distribution of cases of Bronchitis and Pneumonia over the Borough :—

WARDS.	BRONCHITIS.							PNEUMONIA.						
	1897	1898	1899	1900	1901	1902	1903	1897	1898	1899	1900	1901	1902	1903
Eccleston, North..	25	20	19	27	22	28	<b>23</b>	9	12	10	15	16	16	<b>14</b>
Eccleston, South..	17	11	17	24	22	22	<b>27</b>	12	10	9	11	5	8	<b>8</b>
Central ..	27	24	40	29	27	28	<b>27</b>	19	5	7	16	12	18	<b>6</b>
Windle, North ..	16	16	8	19	7	18	<b>18</b>	16	15	9	15	6	12	<b>14</b>
Windle, South ..	23	16	19	19	19	14	<b>9</b>	10	11	14	10	14	6	<b>13</b>
Hardshaw ..	27	26	28	31	13	27	<b>23</b>	32	25	21	20	17	17	<b>28</b>
Sutton, East ..	17	12	26	10	20	25	<b>25</b>	19	10	24	30	20	32	<b>28</b>
Sutton, West ..	14	20	20	22	17	27	<b>13</b>	34	34	20	51	26	31	<b>21</b>
Parr ..	20	24	36	38	16	25	<b>24</b>	16	23	16	24	17	16	<b>17</b>

DEATH RATES FROM ALL RESPIRATORY DISEASES PER 1000.

YEAR.	England and Wales.	St. Helens.
1886	3·64	4·82
1887	3·62	5·31
1888	3·50	4·54
1889	3·30	5·37
1890	4·12	5·78
1891	4·47	7·81
1892	3·96	5·18
1893	3·60	5·17
1894	3·02	3·89
1895	3·47	4·32
1896	2·98	4·38
1897	2·96	4·51
1898	2·89	3·91
1899	3·47	4·37
1900	3·36	4·96
1901	—	3·84
1902	—	4·67
<b>1903</b>		<b>4·16</b>

From these tables it will be noted that respiratory diseases were somewhat prevalent during 1903. The unfavourable climatic conditions were undoubtedly responsible for this.

(c) DISEASES OF THE DIGESTIVE SYSTEM caused 113 deaths; against 135 in 1902, 192 in 1901, 176 in 1900, 157 in 1899, 154 in 1898, 148 in 1897, 150 in 1896, 146 in 1895, 115 in 1894, 147 in 1893, and 132 in 1892.

(d) DISEASES OF THE URINARY SYSTEM caused 38 deaths; against 33 in 1902, 36 in 1901, 24 in 1900, 23 in 1899, 24 in 1898, 28 in 1897, 25 in 1896, 33 in 1895, and 17 in 1894.

(e) DISEASES OF THE REPRODUCTION SYSTEM caused 15 deaths last year; against 12 in 1902, 10 in 1901, 21 in 1900, 19 in 1899, 13 in 1898, 15 in 1897, 10 in 1896, 10 in 1895, and 12 in 1894.



## DEATHS FROM VIOLENCE.

(a) DEATHS FROM ACCIDENT OR NEGLIGENCE numbered **59** during 1903; against 47 in 1902, 59 in 1901, 46 in 1900, 48 in 1899, 50 in 1898, 45 in 1897, 53 in 1896, 52 in 1895, and 58 in 1894.

(b) DEATHS FROM HOMICIDE.—There were no deaths under this heading last year, against 1 in 1902, 1 in 1901, 1 in 1900, 0 in 1899, 1 in 1898, and 2 (1896) during the previous 4 years.

(c) SUICIDE caused **9** deaths during 1903; against 8 in 1902, 8 in 1901, 5 in 1900, 7 in 1899, 5 in 1898, 3 in 1897, 6 in 1896, 1 in 1895, and 7 in 1894.

The death-rate from violence is therefore  $\cdot 77$  per 1,000.

## DEATHS FROM ILL-DEFINED AND NOT SPECIFIED CAUSES.

90 deaths occurred under this heading during the year, being made up as follows:—Dropsy 3, Debility and Atrophy 57, Marasmus 24, Mortification 1, Tumour 1, Abscess 1, and other causes not specified 3 deaths. The deaths for the previous 6 years under the same heading were—109 in 1902, 150 in 1901, 138 in 1900, 147 in 1899, 148 in 1898, 136 in 1897, and 132 in 1896,

The gradual diminution in the deaths certified under this heading, is a matter for congratulation as showing the transfer from this undesirable heading to the more definite causes of death.

## BOROUGH SANATORIUM.

During the year the Hospital has been largely used, 617 cases having been admitted. Of these 511 were cases of Scarlet Fever, while 70 were cases of Enteric Fever.

The following shows the percentage of the notifiable infectious diseases treated in the Sanatorium:—

1891	...	18·4	per cent.	admitted to the Sanatorium.
1892	...	17·1	”	”
1893	...	18·65	”	”
1894	...	22·50	”	”
1895	...	40·21	”	”
1896	...	18·3	”	”
1897	...	20·1	”	”
1898	...	32·02	”	”
1899	...	50·5	”	”
1900	...	47·5	”	”
1901	...	56·9	”	”
1902	...	49·3	”	”
<b>1903</b>	...	<b>55·6</b>	”	”

It will thus be seen that the percentage of admissions to notifications, though not so good as in 1901, is still most satisfactory. Indeed had it not been that owing to the fact that the accommodation was unable to cope with the great number of Scarlet Fever cases, and the impossibility of isolating more than three cases of Diphtheria, the percentage would probably have been better than in any previous year.

The following Table gives the yearly number of admissions, &c., since the Sanatorium was opened in 1881:—

YEAR.	No. remain- ing in Sanatorium on Dec. 31.	Number Admitted	No. who died in Sanatorium.	Total Days in Sanatorium of Patients.	Accommodation.
1882	—	9	3	—	Rooms in Peasley Vale, used as Wards and for Administrative purposes.
1883	—	14	1	—	
1884	—	36	6	—	
1885	—	9	0	—	
1886	—	17	3	—	
1887	—	38	11	—	
1888	—	25	4	—	
1889	—	116*	15	—	
1890	—	128†	20	—	Outbuildings converted into three Wards.
1891	—	89	10	—	
1892	—	134	15	—	
1893	—	150	25	—	
1894	19	182	22	6184	2 New Pavilions used in addition to above.
1895	44	259	54	8962	
1896	46	311†	15	16630	
1897	36	263	24	12955	
1898	51	263	28	12742	Large Pavilion and Observation Block opened.
1899	37	401*	37	18049	
1900	88	445†	31	19203	
1901	73	620†	44	26255	
1902	99	753†	50	32879	
<b>1903</b>	—	<b>617†</b>	<b>36</b>	<b>28067</b>	

\* Enteric Fever Epidemic

† Scarlet Fever Epidemic.

Forty-four of the above 617 patients were admitted from Haydock.

Cases admitted during 1903.	Males.	Females.	Totals.	Deaths.	Average Duration o Cases in Sanatorium 1903.  Days.
Small Pox ... ..	17	12	29	0	36·9
„ Observation ...	1	0	1	0	22·0
Scarlet Fever ... ..	235	276	511	21	47·6
Diphtheria ... ..	0	3	3	0	13·6
Enteric Fever ... ..	49	21	70	15	35·9
Erysipelas ... ..	1	1	2	0	32·0
Puerperal Fever ... ..	0	0	0	0	0·0
Other Diseases ... .. (including Measles)	0	1	1	0	21·0
Totals ... ..	303	314	617	36	

The following shows the number of cases of each Notifiable Infectious Disease which was treated in the Sanatorium during 1903:—

DISEASE.	Total cases in Borough.	Number of such removed to Sanatorium.	Percentage of Removals to Notifications.
Small Pox     ...     ...     ...	27	27	100%
Scarlet Fever ...     ...     ...	728	476	65·4%
Diphtheria, &c.     ...     ...	126	3	2·3%
Typhoid Fever     ...     ...	76	62	81·6%
Puerperal Fever     ...     ...	6	0	0%
Erysipelas     ...     ...     ...	61	2	3·2%

As before stated the hospital has been very largely used during the year. Its popularity seems to increase yearly, and now very little difficulty is found in inducing all patients whose removal is desirable to come in. During the past year some difficulty was found, owing to the Scarlet Fever epidemic, to select those cases whose removal was most urgent. A number of cases, desirous of admission, had to be refused. Still, to isolate 65·4 per cent. of the Scarlet Fever cases, *i.e.*, 500 out of 700, and 81·6 per cent. of the enteric fever cases is a result of which the Health Committee may well be proud. The use of the Sanatorium may also be seen from the fact that only 5·8 per cent. of the cases died and this in spite of the fact that often only the most malignant cases were removed.

The need also for separating the acute cases of Scarlet Fever from the convalescent ones was urgently felt, while the periodic emptying of the various blocks so as to give them a thorough disinfection and airing is a procedure greatly to be desired.

All these considerations led the Health Committee to direct that plans should be prepared for a considerable increase in the accommodation. This was done, with the result that one large new block capable of containing 26 beds, one smaller block 14 beds, a discharging block and a corresponding addition to the Administrative block were decided upon. The plans received the approval of the Local Government Board and the building operations are now well advanced. With this increase St. Helens should for some years to come be able to cope with any epidemic which is likely to occur.

The Matron and Staff are to be greatly congratulated on the work they have done during the year.



### REMOVAL OF PATIENTS AND INFECTED CLOTHING.

No alteration in the procedure in regard to the above was made during the year.

The number of houses which required disinfection was very large.

The following shows the work done during the past seven years : -

	1897	1898	1899	1900	1901	1902	1903
No. of days on which the Disinfecting Apparatus has been used ...	149	115	103	153	156	246	<b>229</b>
No. of Articles Disinfected —							
Beds ...	748	495	654	936	1070	1548	<b>1217</b>
Pillows and Cushions	1183	843	1185	1670	2679	4644	<b>3651</b>
Blankets, Sheets, and Rugs ...	1991	1819	1569	2808	4170	7760	<b>5861</b>
Other Articles ...	1117	617	675	702	2149	3096	<b>2890</b>
Clothing ...	4429	3988	4440	5754	7195	9288	<b>7170</b>
Hospital Clothing...	358	395	837	1248	2681	3730	<b>3520</b>
Books from Library and Schools ...	90	117	133	261	520	624	<b>516</b>
Total ...	9916	8274	9493	13379	20620	30690	<b>24825</b>
No. of Journeys of Van for Collection and Delivery ...	569	547	585	624	724	1092	<b>830</b>
No. of Houses visited...	1861	1189	1450	1624	1742	1963	<b>1651</b>

### BACTERIOLOGICAL DEPARTMENT.

During the past year a large number of cases of Typhoid Fever were examined by means of Widal's serum reaction. On more than one occasion by its means an earlier diagnosis than would otherwise have been possible was able to be made. In certain other cases a negative result was obtained, although the clinical symptoms pointed to Enteric Fever.

Several suspected cases of Diphtheria were examined with varying results, and several examinations of sputum for the presence of the Tubercle Bacillus were also made.

In addition the mixed water of the Borough was examined bacteriologically from time to time. On each occasion it was found to be very pure.

## THE INFANT MILK DEPOT.

Very little new has to be recorded of this institution. It has been described so fully in previous reports, that all that is now necessary will be to detail the results of the years working.

From the point of view of the use made of the Depot, it must be admitted that the year's working has been not altogether satisfactory. The numbers using the Depot have fallen from 200 to 183. The apathy of the people of St. Helens in neglecting what on the face of it, is a most useful institution is certainly most strange. As far as one can judge, the distance of the Depot from the outlying districts limits its usefulness, still the obtaining of a pure food at such a reasonable price, should, one would think, be an inducement to fetch it. The success of the Depôts at Liverpool, Battersea, Ashton, etc., is in striking contrast. During the year too, the milk has been sent to Manchester, Haydock, Earlestown, Rainhill, Widnes, Prescott, etc., and many striking testimonials have been received as to the benefits accruing from its use.

If the amount of use made of the Depot is disappointing, the results obtained by those using it are more striking even than in previous years. Among infants using the milk the death-rate has been only at the rate of 54 per 1000 as against 82 last year, while the infantile rate in the Borough as a whole was 137 per 1000. Thus it will be seen that the saving of life has equalled 83 per cent.

The 10 deaths among children using the milk, include 3 from tubercular diseases, 2 from diarrhoea, 1 marasmus, 2 bronchitis, and 2 catarrh.

Annexed is a Table showing the results obtained each year since the Depot was started :—

YEAR.	No. of Children on books.	Death-rate per 1000 among children at Depot.	Infantile Death-rate.
1899	232	103	157
1900	332	102	188
1901	282	106	175
1902	200	82	167
<b>1903</b>	<b>183</b>	<b>54</b>	<b>137</b>

In addition to the 183 shown above, 49 children have used the milk for periods varying from 1 to 14 days.

It is greatly to be hoped that in 1904 more use will be made of this institution.

During the year, with a view to increasing the efficiency of the Depot, it was decided to supply the milk in three strengths, and this certainly seems to be a move in the right direction. If some arrangement could be arrived at, by means of which sub-depôts could be established at Sutton, Parr and Thatto Heath, the scope of the work might be greatly enlarged.

The following is a statement of the cost up to date :—

	1899-1900. (8 months).	1900-1901.	1901-1902
Cost of Installation ...	£235 2 5 ...	£123 7 1 ...	£32 8 7

This £358 9 6d., though paid out of revenue, may be really regarded as a capital charge, as it will not occur in future years.



<i>Current Expenditure—</i>	1900-1901.	1901-1902.	1902-1903.	1903-1904.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Wages for Attendance ..	115 11 5	119 2 2	116 7 9	108 13 11
Milk .. .. .	272 9 2	185 5 10	185 13 4	123 19 2
Rent of House and Rates ..	18 0 0	18 0 0	21 15 0	22 3 11
Sugar .. .. .	8 6 6	14 2 6	16 6 6	9 2 0
Fuel, Gas and Water ..	9 4 0	9 19 10	15 4 8	12 2 8
Sundries .. .. .	21 13 5	22 19 6	22 16 1	25 11 7
Renewal of Bottles, &c. ..	25 18 8	33 6 5	62 1 2	24 14 2
	<hr/>	<hr/>	<hr/>	<hr/>
	471 3 2	402 16 3	440 4 6	326 7 5
Income from sale of Milk	328 9 5	245 16 3	208 16 8	139 13 8
	<hr/>	<hr/>	<hr/>	<hr/>
Amount falling on Rates ..	£142 13 7	£157 0 0	£231 7 10	£186 13 9

Thus it will be seen that the cost to the town has been very small, and has been more than repaid by the benefits which have accrued.

### **SANITARY STAFF.**

This consists of—

The Medical Officer of Health.

Canal Boats Inspector. This Office is held by the Surveyor.

Chief Inspector of Nuisances.

Four Male Assistant Nuisance Inspectors.

Two Female „ „ „

A Veterinary Inspector, who acts as Meat Inspector.

An Inspector under the Sale of Food and Drugs Act.

One Clerk

Two Disinfecting Men.

One Laboratory Attendant.

### **GENERAL SANITARY WORK DURING 1903.**

At the fortnightly meetings of the Health Committee a report was presented dealing with the Health Statistics for the previous fortnight, and in these reports special attention was drawn to points requiring consideration.

The following special reports were also submitted during the year :—

Report on the Royal Institute of Public Health Congress at Liverpool.

Report on the out-break of Small-pox.

### **WATER SOFTENING WORKS.**

Samples have been taken from these works daily, and tested as to their hardness by the Medical Officer of Health. Each sample is obtained by allowing the softened water to drop for twenty-four hours into a glass vessel. At the end of this time the contents are well mixed, and the sample taken. In this way a true sample is obtained.

	No. of Samples Tested.	Mean Hardness.
January	31	10·1
February	28	10·2
March	31	10·1
April	30	10·2
May	31	10·2
June	30	10·1
July	31	10·5
August	31	10·1
September	30	10·1
October	31	10·1
November	30	10·1
December	31	10·1

Total 365      Mean for the year = 10·19.

The average hardness of the unsoftened water was 21·8.



## MILK SUPPLIES.

A pure milk supply is one of the most important points, from a health point of view, in the sanitary administration of a town. The year 1903 shows a marked advance in obtaining this object.

The milk-shops, dairies and cowsheds were visited frequently by the assistant Sanitary Inspectors and as a rule were found in good order. Some of the smaller milk-shops still leave much to be desired, but on the whole they were found in an improved state.

In addition to this, every shippin in the Borough was inspected by the Medical Officer of Health and the Veterinary Inspector. The shippins were found in a distinctly better condition than in the previous year. More ventilation and light had been provided and but little overcrowding was found. In nearly all cases the middensteads were in good order.

The Veterinary Inspector also examined every cow found in the shippins, especially with a view to the detection of tubercular disease, particularly tubercular disease of the udder. In no single instance did he discover signs of this or indeed of any other diseased condition of the udder. This may be considered a most satisfactory state of affairs.

The total number of cowsheds in use in the Borough of St. Helens during 1903 was 43, while the total amount of accommodation in the shippins belonging to them was for 337 cows. The number of persons registered as purveyors of milk, exclusive of cowkeepers, was 144.

Twelve new premises were registered during the year, namely, three as cowkeepers and nine as purveyors of milk.

No case of infectious disease was traceable to milk during the year.

## PROPERTY UNFIT FOR HUMAN HABITATION.

The following is a list of houses which have been closed by order of the Sanitary Authority during 1903 (under Bye-law No. 93 with regard to Buildings) :—

Jan. 7th—No. 5, Copperas Street	...	...	...	}	Closed.
Jan. 7th—Nos. 132, 134, and 136,					
and Nos. 1, 3, and 5,					
Back of Mertonbank Road	...	...	...		

## CANAL BOATS ACT.

The following is a copy of the Annual Report of the Inspector under this Act to the Local Government Board :—

In compliance with Section 3 of the Canal Boats Act, 1884, I have to present to you my Annual Report as to the execution of the Canal Boats Acts, 1877 and 1884, for the year ending December 31st, 1903.

(1) The Corporation of St. Helens have appointed me to be Inspector under the Canal Boats Act, in addition to my duties as Borough Engineer. No special remuneration is made for my duties under the Canal Boats Acts

(2) The number of boats inspected in 1903 was 21, against 22 in 1902.

(3) There were nine infringements of the Acts and Regulations on eight of the twenty-one boats inspected. Of these one boat contravened article 3, clause H Local Government Board Regulations, 1878, the bulkhead next cargo being defective.

One boat contravened article 10 Local Government Regulations 1878, the pump being defective.

Two boats contravened Section 1 Canal Boats Act, 1877, the cabins being overcrowded.

Another boat contravened Article 3, Clause H, Local Government Board Regulation, the cabin floor being defective. One contravened Section 2, Canal Boats Act, 1877, and article 2, part 4, Local Government Board Regulations, there being no certificate on board and cabin requiring re-painting. One boat contravened Section 3, Canal Boats Act, 1877, there being no certificate on board; whilst one boat was found to contravene Section 1 Canal Boats Act, 1877, the boat not being registered.

Complaint notes were served in each case.

A certificate was received from another Registration Authority stating that the necessary work had been done in respect to one boat, whilst four were subsequently re-inspected here and the causes of complaint had been attended to. The other three boats were met with late in the year and they are still the subject of correspondence, one is in dock undergoing the necessary repairs, another has been inspected with a view to registration and the owners state that a new certificate has been put aboard the other.

(4) No legal proceedings were taken during the year for infringements.

(5) No case of Infectious disease was discovered on any Canal Boat during the year, nor was any case reported to the Medical Officer of Health.

(6) No boats were detained for cleansing or disinfection.

(7) No boats are at present on the Register.

(8) No boats were registered during 1903.

The canal was visited 31 times for the afore mentioned number of Inspections.

I herewith append a table showing the foregoing facts.

I am, Gentlemen,

Your obedient servant,

GEO. J. C. BROOM,

Canal Boats Inspector for the County Borough  
of St. Helens, Registration Authority.

### **BLACK SMOKE NUISANCE.**

There can be no doubt that the nuisance arising from this cause has been considerably mitigated during the year, and this without resorting to prosecution.

It was considered by the Health Committee that if black smoke issued from any chimney for any longer period than five minutes at one time, that a nuisance which could be prevented was thereby caused.

During the year considerably more attention was devoted to this subject than was the case ever before. The new method of timing the chimneys which was adopted in the previous year was continued. It consists in timing each chimney for half-an-hour and recording the emission of smoke every half minute, and noting whether it was dense, moderate, faint, or absent. By this method a fairer measure of the nuisance caused can be obtained. Appended is a copy of the chart on which the observations are recorded, a copy of which is at once sent to the works offending. Altogether 407 chimneys were timed during 1903. Of these 407 observations taken, in 90 instances black smoke was emitted for over five minutes, the longest time being 17 minutes.

In each of the 90 cases the works were at once communicated with and a reply obtained as to the cause, together with an assurance that greater care would be exercised in the future.



ST. HELENS CORPORATION.

MEDICAL OFFICER OF HEALTH'S DEPARTMENT,  
TOWN HALL, ST. HELENS,  
.....190

BLACK SMOKE OBSERVATIONS.

Date.....190

Name of Firm .....  
.....  
Chimney.....  
Time—From..... to.....

Minutes.	Dense.	Moderate.	Faint.	Nil.	Remarks.
5					
10					
15					
20					
25					
30					
Total ..					

SWINE FEVER.

The prevalence of this disease has no very direct bearing on the public health, but from the fact that so many pigstyes exist, even in populous areas in St. Helens, it is not uninteresting to note the number of outbreaks from year to year. Again the destruction of the affected animal in the Refuse Destructor at Parr, and the cleansing of the premises, have been carried out by the Health Committee.

The number of outbreaks reported in each of the past ten years is as follows:—

1894	1895	1896	1897	1898	1899	1900	1901	1902	1903
10	27	33	26	20	45	19	27	8	10



OFFENSIVE TRADES

The following offensive trades are on the register :—

Tripe Boilers	...	...	...	...	5
Gut Scrapers	...	...	...	...	1
Manure Manufacturers	...	...	...	...	1
Soap Boilers	...	...	...	...	1
Fat Boilers ...	...	...	...	...	1
Bone Boilers	...	...	...	...	1
Total					10

COMMON LODGING HOUSES.

There are 13 Registered Common Lodging Houses in St. Helens against 13 in the previous year. These contain 85 Registered Sleeping Rooms, having beds for 331 adults.

These have been inspected regularly during the day by the Nuisance Inspectors, and at night by the Police, and were Lime-washed in April and October.

During the recent epidemic of Small-pox in London and the provinces it was thought advisable to obtain daily a return of all persons lodging in each house, together with the place from which they came and their destination.

Appended is the Form employed :—

Common Lodging House.....Street.

SIR,  
In pursuance of Section 83, Public Health Act, 1875, I beg to inform you that he following persons slept in the above-named Lodging House last night.

Dated this.....day of.....190

Signed,

.....  
TO THE  
MEDICAL OFFICER OF HEALTH,  
TOWN HALL, ST. HELENS.

NAME.	AGE.	SEX.	LAST TOWN VISITED.	WHERE GOING.

The above Form was found very beneficial, and by its means all persons coming from other towns where Small-pox was prevalent were placed under daily observation during their stay here.

## SLAUGHTER HOUSES.

There were on December 31st 11 Licensed Private Slaughter Houses, 8 being fully licensed, 3 pigs only, together with the Public Abbatoir and 1 Knacker's Premises.

The Licenses of the above 11 Slaughter Houses have been renewed for one year.

The following figures show the number of Cattle Beasts killed in the Corporation Slaughter House and in the rest of the Borough :—

			Corporation Slaughter House.			In other Slaughter Houses.
1891	...	...	995	...	...	2714
1892	...	...	951	...	...	2959
1893	...	...	1321*	...	...	2859
1894	...	...	1203*	...	...	2847
1895	...	..	1226	...	...	2026
1896	...	...	1763	...	...	1634
1897	..	...	1976	...	...	879
1898	...	...	2465	...	...	623
1899	...	...	2682	...	...	734
1900	...	...	3131	...	...	516
1901	...	...	2690	...	...	628
1902	...	...	4140	...	...	797
<b>1903</b>	...	...	<b>2710</b>	...	...	<b>519</b>

\* Owing to want of accommodation, butchers had to kill elsewhere, who would have killed here.

The following gives the number of Animals Slaughtered in St. Helens during 1903 and eight preceding years :—

ANIMALS KILLED.	1895	1896	1897	1898	1899	1900	1901	1902	<b>1903</b>
No. of Beasts killed within the Borough in public and private slaughter houses for market purposes ..	3252	3397	2852	3088	3416	3647	3318	4937	<b>3229</b>
No. of Sheep .. ..	3648	3420	4487	3520	3048	3537	3780	3957	<b>3288</b>
No. of Calves .. ..	471	459	427	443	401	413	338	451	<b>343</b>
No. of Pigs .. ..	3348	7338	6384	5957	6594	7748	6810	7899	<b>8942</b>
<b>Total .. ..</b>	<b>11832</b>	<b>15314</b>	<b>14150</b>	<b>13008</b>	<b>13459</b>	<b>15345</b>	<b>14246</b>	<b>17244</b>	<b>15802</b>
Beasts killed in the Corporation slaughter house, which are included in the above number .. ..	1226	*6520	*6520	*7430	*7550	*9597	8957	11381	<b>9867</b>

\* Including Sheep, Pigs. etc,

Meat or other Articles seized or given up on account of being Unfit for Human Food, during the year ending January 9th, 1904.

Beef and Offal	...	...	21 carcasses.
Pork and Offal	...	...	4 „
Beasts Lungs	...	...	298 pairs.
Beasts Hearts	...	...	93.
Beasts Livers	...	...	113.
Beasts Rumen & Intestines...			44.
Pigs Offal	...	...	14.
Pigs Livers	...	...	4.
Pigs Lungs	...	...	5.
Beasts Udders	...	...	28.
Beasts Head...	...	...	1.
Hind Quarter	...	...	1.
Kidneys	...	...	1 box.
Haddies, Kippers, Fillets, Mackerel, etc.	...	...	491 boxes.
Mussels	...	...	6 bags.
Cockles	...	...	1 bag.
Shrimps	...	...	1 box.
Rabbits	...	...	30 couples.

No prosecutions were instituted for offences during the year.

#### REPORT OF PUBLIC ANALYST FOR YEAR 1903.

The following Table shows the work done by the Public Analyst during the year 1903.

Name of Sample Analysed.	Number of Samples Analysed.	Number of such Samples which were found to be genuine.	Number of such Samples which were found to be adulterated.	No. of Cases in which a Summons was taken out.
New Milk	77	70	7	3 cases fined.
Vinegar	2	2	—	—
Whiskey	10	10	—	—
Butter	29	29	—	—
Cheese	8	8	—	—
Lard	2	2	—	—
Tea	4	4	—	—
Coffee	4	4	—	—
Pepper	6	6	—	—
Beer	2	2	—	—
Porter	2	2	—	—
Margarine	1	1	—	—
Mustard	3	1	2	—
Totals	150	141	7	3



APPENDED IS A TABLE SHOWING THE NUMBER OF SAMPLES SUBMITTED FOR ANALYSIS SINCE 1894,  
THE NUMBER OF SUCH SAMPLES WHICH WERE ADULTERATED, AND THE PERCENTAGES  
OF ADULTERATED SAMPLES DURING THE YEAR.

Articles Purchased.	1894		1895		1896		1897		1898		1899		1900		1901		1892		1903	
	Total Samples	No. Adul- terated	Total Samples	No. Adul- terated.	Total Samples	No. Adul- terated	Total Samples	No. Adul- terated	Total Samples	No. Adul- terated	Total Samples	No. Adul- terated	Total Samples	No. Adul- terated	Total Samples	No. Adul- terated	Total Samples	No. Adul- terated	Total Samples	No. Adul- terated
Milk	25	2	82	8	82	4	69	11	72	..	59	..	36	..	54	4	82	6	77	7
Separated Milk	..	..	..	..	1	..	..	..	3	..	..	..	7	..	3	..	3	..	10	..
Whiskey	12	3	6	1	6	..	6	..	47	..	2	..	43	..	24	..	30	..	29	..
Butter	12	2	30	..	30	3	36	..	1	1	4	1	1	1	2	..	2	1	1	..
Margarine	..	..	..	..	..	..	1	..	2	..	2	..	..	..	..	..	..	..	..	..
Bread	..	..	..	..	..	..	2	..	2	1	6	..	4	..	2	..	2	..	4	..
Coffee	..	..	1	..	2	..	5	..	3	..	5	..	4	..	11	..	2	..	8	..
Cheese	..	..	..	..	6	..	6	..	2	..	4	..	3	..	1	..	2	..	2	..
Vinegar	..	..	3	..	..	..	2	..	1	..	2	..	..	..	..	..	..	..	..	..
Cocoa	..	..	..	..	6	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..
Lard	..	..	..	..	2	..	4	..	2	..	5	..	4	..	1	..	3	..	6	..
Pepper	..	..	..	..	2	..	..	..	..	..	..	..	26	..	25	..	5	..	2	..
Beer	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	2
Mustard	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Paregoric	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tincture of Opium	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Spirits of Nitre	..	..	2	..	..	..	2	..	4	..	6	..	4	..	4	..	2	..	4	..
Tea	..	..	..	..	..	..	..	..	1	..	..	..	..	..	7	..	5	..	2	..
Peas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..
Stout	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Golden Syrup	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chocolate Cream	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Spanish	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ice Bar	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Toast Waste	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Raspberry Noyeau	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ice Cream	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..	..	..
Shrimps	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lobster	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	49	7	128	9	133	7	133	11	139	2	140	4	146	1	144	4	144	7	150	9
Percentage of Adulterated Samples—St. Helens.	14.3		7.03		5.26		8.27		4.3		2.85		.68		2.77		4.86		6.00	
Percentage of Adulterated Samples—All England	10.3		9.3		9.2		9.4		8.7		9.4		8.8		8.8		—		—	
Average Amount of Fine in each Case, exclusive of Costs—	s. d. 4 7½		s. d. 12 2¾		£ s. d. 1 5 8½		£ s. d. 2 12 5		s. d. 5 0		£ s. d. 11 10 0		£5		£1 17 6		s. d. 14 3¾		£ s. d. 7 6 8	
	£1 15 7		£1 15 9		£1 10 9		£1 11 0		£1 16 8		£2 4 3		£2 6 7		£1 17		—		—	

## FACTORIES AND WORKSHOPS.

The Factory and Workshops Act, 1901, came into force at the beginning of the year 1902, and has thrown upon the Local Authority a number of additional duties. Section 132 of the Act further lays down that the Medical Officer of Health of every district council shall every year report specifically on the administration of the Act on workshops and workplaces in the district under his supervision, and transmit a copy to the Secretary of State, for the Home Department. Although this has been done for many years in St. Helens this portion of the Annual Report deals more fully with the subject and has reference to everything which has concerned the Public Health Department in 1903, in relation to workshops and workplaces.

A Register of Workshops has been carefully prepared containing the names and addresses of the occupier, the trade or manufacture, the position and cubic capacity of the workrooms, the number of occupants, the means of escape from fire, the number of W.C.'s, &c.

The following table shews the various trades and occupations carried on in workshops, which are now on the register.

Dressmaking and mantle making ...	65	Clogger and Boot Repairs ..	42
Milliners ...	26	Tinsmiths ...	1
Tailors ...	11	Flour Packing ...	1
Stocking Knitters ...	8	Laundries ...	2
Underclothing ...	2	Herbal Brewers ...	2
Joiners, Builders, Cabinet-makers, Plumbers, &c. }	21	Pearl Ash Manufacturers ...	1
Blacksmith, Wheelwright, Coach Builders, &c. }	8	Seltzogene Charge Makers...	1
			<hr/> 191 <hr/>

Each of these workshops has during the year been visited several times and has been measured to ascertain their cubical contents. Speaking generally it may be said that they were kept in a clean condition, it only being requisite to serve eight notices requiring owners to limewash workshops, and two notices to repair yard paving. The standard of 250 cubic feet of air space per head was well recognized. Regarding the ventilation, it was found that the workers themselves were very indifferent in the matter and failed to use the means of ventilation provided.

The provision of sanitary accommodation is generally good. Two notices only were served to provide W.C.'s or to increase present accommodation.

Four notices were served to provide additional handrail or protect stairs to workshop.

The following were notified to the Home Office, 21 new workshops, five removals, and ten given up.

Great difficulty has been found in tracing the home workers, and it appears that there are but few of these in St. Helens.

## **BAKEHOUSES.**

Bakehouses are either factories or workshops within the meaning of the Act according as mechanical power is or is not used, and are therefore subject to the general provisions of the Act.

The Act provides that after January 1st, 1904, it will not be lawful to use any underground bakehouse unless the Council is satisfied that it is suitable, and has given a certificate to that effect as regards construction, light, ventilation, and in all other respects. In St. Helens only two underground bakehouses exist and these are in every respect satisfactory. It has therefore been unnecessary to frame regulations on this subject.

There are 94 Bakehouses being used in the Borough, and these were each visited on several occasions. They were limewashed in April and October. It was necessary to serve 30 notices to cleanse and limewash. Three notices were served to remove drains or openings in the bakehouse, and five notices were served to remove litter in close proximity to bakehouse. On one occasion laundry-work was found to be carried on. The whole of the notices were complied with and no further action was necessary.

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## NUISANCE INSPECTORS' WORK DURING 1903.

Systematic house-to-house inspections have been carried on during the year by the Assistant Nuisance Inspectors, and the following Tables gives a list of the number of cases in which nuisances were found, and for which notices had to be served.

### SANITARY NOTICES.

NUMBER OF SANITARY NOTICES SERVED.	1895	1896	1897	1898	1899	1900	1901	1902	1903
To Clean Choked Drains and W.c.'s ..	303	230	291	193	285	331	361	375	<b>446</b>
,, Repair or Re-lay Defective Drains ..	63	66	87	167	209	250	241	57	<b>157</b>
,, Drain Dwelling-Houses .. ..	25	7	5	15	11	3	6	4	<b>7</b>
,, Disconnect and Ventilate Drains ..	..	..	..	84	210	270	228	253	<b>393</b>
,, Disconnect Downspouts .. ..	..	8	19	60	144	109	175	33	<b>95</b>
,, Repair or Lengthen W.P. to Slopstones	55	52	49	53	67	94	85	54	<b>51</b>
,, Provide W.P. to Slopstones .. ..	..	..	12	29	46	40	35	25	<b>22</b>
,, ,, Slopstones .. ..	13	4	19	34	34	53	62	57	<b>21</b>
,, Repair W.C.'s, Baths, Basins, and Lavatories .. ..	18	2	26	13	23	48	34	27	<b>38</b>
,, Repair Roofs of Dwelling-houses ..	258	108	129	131	214	182	181	108	<b>169</b>
,, Cleanse Backyards, Privies, & Passages ..	30	18	21	37	24	46	28	27	<b>16</b>
,, ,, and Whitewash Filthy Dwellings	42	31	27	31	35	23	14	18	<b>45</b>
,, Provide Doors to Privies, Pail Closets, and Ashpits .. ..	258	170	239	252	283	385	298	278	<b>301</b>
,, Repair or Re-hang Doors to Pail Closets, Ashpits and Privies .. ..	..	..	141	120	157	299	259	96	<b>712</b>
,, Repair Privies and Ashpits .. ..	21	8	1	51	36	70	86	76	<b>68</b>
,, ,, Eaves and Downspouts .. ..	182	75	134	101	98	124	75	75	<b>103</b>
,, Provide ,, ,, .. ..	..	42	22	50	37	41	32	50	<b>51</b>
,, Repair Pavement, etc., Backyards	94	69	128	267	240	371	298	224	<b>197</b>

Number of Sanitary Notices Served.	1895	1896	1897	1898	1899	1900	1901	1902	1903
To Repair Pavement & Floors in Dwelling-houses .. .. .	..	..	..	..	47	69	73	61	20
„ Remove Fowls, Pigeons, etc., from Dwellings .. .. .	1	12	6	16	7	6	3	4	3
„ Remove Pigs .. .. .	27	28	17	6	21	31	21	19	9
„ „ Rubbish .. .. .	25	18	15	29	35	48	24	7	3
„ „ Manure .. .. .	15	17	24	6	18	16	20	18	8
„ Reconstruct Middensteads .. .. .	..	..	..	..	..	11	26	11	25
„ Clean Foul Ditches and Cesspools .. .. .	29	14	22	25	106	45	41	43	21
„ Provide or Repair Ashboxes .. .. .	179	340	32	54	715	170	116	165	719
„ Overcrowding .. .. .	153	33	31	24	24	23	26	18	42
„ Replaster Walls or Ceilings of Dwellings .. .. .	..	..	..	86	95	108	152	70	72
„ Prevent Dampness in Dwellings .. .. .	..	..	..	..	..	25	57	53	13
„ Remove Sheds, etc., from Backyards .. .. .	..	..	..	..	..	..	33	11	7
„ Remedy Defects in Bakehouses.. .. .	..	..	10	8	4	2	4	24	40
„ „ „ Workshops.. .. .	..	..	..	..	..	7	5	15	14
„ „ „ Cowsheds & Dairies .. .. .	..	8	12	3	7	..	31	12	1
„ Provide Water Supply .. .. .	..	..	..	..	18	9	13	14	11
„ Miscellaneous .. .. .	231	215	164	122	207	175	164	156	84
Foul Ashpits to be Reconstructed to W.C.'s .. .. .	..	..	218	92	227	135	87	102	160
Totals .. .. .	2026	1579	1895	2159	3714	3619	3394	2740	4144

REPORT OF THE WORK DONE BY THE INSPECTOR  
APPOINTED TO TEST DRAINS.

The following is a summary of the work done during the year :—  
*New Drains.*—858 new drains have been tested with the water test.

Of these 695 proved satisfactory on the 1st test.  
130 „ „ „ 2nd „  
25 „ „ „ 3rd „  
7 „ „ „ 4th „  
1 „ „ „ 5th „

The improvement in the laying of the drains will be noted, 81·0% being satisfactory on the first test, and only 3·8% requiring more than two tests.

*Old Drains.*—The smoke test has been applied to all the houses in the following streets:—Central Street, College Street, Ormskirk Street, North John Street, New Cross Street, Rigby Street, Barrow Street, Hamer Street, Brook Street, King Street, Henry Street, Marsh Street, Park Road, William-son Street, Park Street, Johnson Street, and Ross Street.

The results were as follows :—  
Total number of houses tested ... 657  
Drains were found defective in ... 236  
Gullies do. in ... 41  
Total defects ... 277 or 42·1%

In 1902, 540 houses were tested, showing 46·1 of defects.

These figures speak for themselves, and more than justify the appointment of the Inspector. This work cannot but re-act most favourably on the health of the Borough. It is however to be regretted that this work cannot be carried on at a much quicker rate. This however is impossible with the present staff,





WEEKLY RECORD OF METEOROLOGICAL CONDITIONS TAKEN AT VICTORIA PARK.

WEEK ENDING.	Barometer.	Maximum Temp.	Minimum Temp.	Mean Temp.	Mean Soil Temp. (4 feet.)	Rainfall (total in.)	WIND										Force of Wind.		
							Direction of Wind.								Total Mileage	Max Gust.	Max mile- age p hour.		
							Number of Hours per Week.												
							N	NE	E	SE	S	SW	W	NW					
Jan. 3	ins. 29.134	° 51.0	° 29.8	° 37.1	° 44.4	ins. .80	12½	..	4½	4½	23	39½	57	27	2661	34	58		
„ 10	29.320	52.8	27.0	43.2	44.4	1.22	7½	3½	17½	26	22½	55½	26	8½	2323	34	43		
„ 17	29.961	43.5	24.0	29.8	43.7	.50	24	2	59½	56½	1	..	3	24	2304	22	34		
„ 24	29.866	47.5	31.5	39.5	43.5	1.23	..	..	13	72	33	20	25	5	2449	20	32		
„ 31	29.751	54.0	38.8	46.8	43.5	.15	..	..	..	..	27½	81	59½	..	2894	30	47		
Feb. 7	29.714	52.0	33.0	43.4	42.1	.43	8½	..	..	5	41	57	35	20½	2331	30	56		
„ 14	30.058	55.5	35.0	47.0	42.3	.25	..	..	..	..	6	64½	56½	41½	2431	28	40		
„ 21	30.014	55.8	32.6	45.5	43.4	.22	..	..	10	40½	36½	47	22	14	2361	30	50		
„ 28	29.303	53.5	32.8	43.3	44.0	1.67	..	..	..	4½	49½	62½	56	½	2694	40	62		
Mar. 7	29.307	51.2	33.0	41.6	44.0	.92	3½	..	4½	9½	42½	41	41½	26	2437	28	42		
„ 14	29.740	51.8	33.3	43.1	44.4	1.08	..	..	15	19½	72½	11½	13	36½	1831	24	36		
„ 21	29.511	54.2	32.2	44.3	44.5	1.27	..	2	12½	21½	46½	59	30	6½	2549	28	46		
„ 28	29.263	61.5	38.0	50.0	44.6	.25	..	..	..	13½	90½	46½	16	1½	2251	30	47		
Apl. 4	29.706	55.0	34.2	45.0	44.6	.86	6	..	3½	13	13	27	50½	55	2447	36	50		
„ 11	29.749	56.0	37.0	47.5	44.7	.19	4	..	..	1	9	14½	54	85½	2420	36	51		
„ 18	29.949	56.0	31.0	38.1	44.8	.73	42½	..	..	..	..	4½	14½	105½	2686	28	42		
„ 25	29.568	53.0	28.2	40.1	44.8	.05	41½	18½	41½	17½	1	..	10½	36½	1393	18	27		
May 2	29.220	59.0	38.0	49.8	44.8	1.25	2	..	53½	51½	23½	8½	10½	18	1275	18	26		
„ 9	29.288	57.0	41.8	49.1	45.1	2.36	8	15	72	27½	5	2	17	21½	1352	16	25		
„ 16	29.697	59.0	34.0	46.6	46.0	.58	21½	7½	7½	2½	9	35	25	31	1598	22	36		
„ 23	29.850	76.0	37.5	53.5	46.0	.65	11½	5½	9½	26½	28	19	24½	36½	1191	18	31		
„ 30	29.988	70.0	43.0	57.4	46.8	.02	3	17	117½	20½	4	2½	..	3½	1657	22	32		
June 6	30.013	71.0	43.5	57.8	47.9	.01	22½	11½	47½	3	2	1½	4	76	1284	18	27		
„ 13	29.883	70.0	37.0	56.5	49.9	.00	19½	44	75	6	..	..	8½	15	1896	20	36		
„ 20	29.535	65.0	35.0	50.2	50.9	.83	44	56½	40½	15½	..	..	2	9½	1455	16	26		
„ 27	29.941	71.0	36.0	57.7	52.5	1.13	7½	..	22½	57	42½	14½	7½	17½	947	12	24		
July 4	29.941	78.5	49.5	61.0	53.2	.19	1½	..	6	11½	18½	39½	59	31½	1487	20	30		
„ 11	29.920	73.0	46.0	58.4	53.9	.08	15	..	..	6	21	3	46	75	1627	30	51		
„ 18	29.606	69.0	48.0	58.5	55.0	2.32	6½	5	21	14½	19½	29½	35	36	1204	16	27		
„ 25	29.706	69.0	47.8	59.2	55.1	.83	12½	4½	28	26	27	10½	15	44	1115	16	27		
Aug. 1	29.586	70.0	47.0	57.8	55.5	.92	8½	..	4½	15½	4½	6½	51	77½	1504	24	30		
„ 8	29.739	69.0	53.0	60.0	55.5	.70	..	..	½	7	26	25	62	47	1836	23	37		
„ 15	29.554	72.0	55.5	59.1	55.8	.97	6	..	9	19	28	49	35½	21½	1395	24	42		
„ 22	29.483	63.5	50.0	56.1	56.0	1.87	9	7	17	19½	15½	16	45	39	1516	26	43		
„ 29	29.704	66.0	49.0	56.9	56.0	.87	9	4	18½	15½	15½	53	30½	22	2126	28	37		
Sept. 5	29.700	70.0	47.0	57.7	58.8	1.44	..	2	18½	43	21	37	35	11	1987	28	46		
„ 12	29.754	67.0	41.0	52.7	55.4	2.57	7½	1½	2½	9½	15½	27½	52	51	2396	36	46		
„ 19	30.042	64.0	36.0	48.3	54.5	.50	23½	7½	34	38	14½	5	16½	28	1447	20	28		
„ 26	29.935	70.0	53.0	60.7	53.8	.13	..	2	45½	72	19	..	15½	14	1965	38	45		
Oct. 3	29.579	66.0	46.0	57.0	53.2	.95	..	..	5½	52½	63½	20	19	7½	1721	26	37		
„ 10	29.425	61.0	37.0	52.7	53.2	1.68	18	2½	17½	26	19	30½	31½	19½	2140	44	68		
„ 17	29.394	58.0	42.0	49.5	53.2	2.09	8½	3	4	13½	33	34	49½	17½	2356	36	50		
„ 24	29.506	58.0	40.0	50.1	53.2	1.71	11½	..	..	23½	55	35½	17½	24½	1878	18	30		
„ 31	29.213	59.0	42.0	48.7	53.0	1.63	..	1½	7	36	60	25	32½	5½	2051	22	47		
Nov. 7	30.254	54.0	32.0	44.4	51.9	.75	1	..	33	43½	23½	8½	28	30½	1205	18	25		
„ 14	29.860	55.5	32.0	46.4	50.2	.73	..	..	4	28	45	26	38½	26½	2117	28	40		
„ 21	29.698	52.0	25.0	39.8	49.5	.75	19½	1	2	16	6½	12½	4½	68	2060	40	56		
„ 28	29.694	55.0	35.0	44.0	49.2	1.51	36½	7	3½	3	1	20	35	53	1908	30	46		
Dec. 5	29.294	47.5	25.0	35.6	48.0	.60	1	3	25	36	29	27	23	25	1888	30	45		
„ 12	28.977	48.5	29.0	39.9	46.2	.64	½	8½	26	23½	53	32½	25½	8½	1917	26	36		
„ 19	29.471	46.0	32.5	39.8	45.5	.40	..	7	75	46	14½	1½	..	..	1671	24	34		
„ 26	29.839	51.5	30.5	46.8	45.5	.13	..	In	stru	ment	out	of	order	..	1408	20	37		
Totals						45.61	485	250½	1034½	1155	1277½	1288½	1471½	1506	Highest readings				
Means	29.657	59.9	37.8	48.9	48.9										2894	44	68		

RAINFALL

AT ECCLESTON HILL WATER WORKS FOR 30 YEARS.

	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883
January ..	2.78	*	1.70	1.70	3.54	*	.49	.08	2.72	2.58
February ..	.62	*	3.60	4.50	1.77	*	.80	4.17	1.73	3.38
March ..	2.02	.63	2.34	2.43	1.13	1.42	1.37	2.41	2.15	.53
April ..	1.01	.34	3.25	3.13	2.20	1.14	.66	1.23	4.06	1.09
May ..	1.44	2.30	.42	2.69	4.34	1.58	1.90	3.35	1.71	.68
June ..	.96	3.80	2.61	1.07	3.32	3.10	2.15	2.60	6.07	2.90
July ..	2.65	3.26	2.74	5.32	1.40	4.53	5.82	3.47	5.27	3.32
August ..	3.24	3.35	3.50	6.16	4.87	5.15	2.38	6.60	4.41	2.25
September ..	2.43	5.65	3.96	3.01	5.06	3.77	2.90	2.46	3.10	6.41
October ..	4.26	5.81	2.90	3.46	3.94	2.07	3.13	3.14	3.00	5.81
November ..	4.50	4.10	4.96	2.50	3.94	.64	2.03	2.91	3.43	2.60
December ..	1.51	.78	4.38	2.90	*	.61	6.16	4.30	2.12	1.65
Totals ..	27.42	30.02	36.36	38.87	35.51	24.37	29.79	36.72	39.77	33.20

\* Gauge broken.

	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893
January ..	3.51	1.78	3.99	0.98	0.93	0.65	3.17	1.01	1.80	0.89
February ..	2.33	2.35	0.80	0.61	0.61	1.53	0.19	0.08	1.54	3.07
March ..	2.49	1.94	1.84	1.33	1.89	1.27	2.28	0.76	0.73	0.77
April ..	1.07	1.38	1.12	1.06	1.09	1.92	1.31	1.95	1.15	0.39
May ..	0.82	2.14	4.25	2.03	0.66	2.47	1.58	2.13	3.36	1.30
June ..	2.11	3.32	1.68	0.91	2.54	0.35	2.27	3.39	4.08	1.74
July ..	3.30	1.91	3.03	1.17	6.87	2.98	2.43	3.26	3.20	3.32
August ..	2.02	1.98	1.74	1.50	3.31	4.75	3.67	6.50	4.15	2.79
September ..	3.09	4.58	3.47	5.36	1.56	2.25	1.48	2.92	3.80	3.85
October ..	1.49	5.99	4.05	2.37	1.85	2.84	2.09	3.49	6.25	2.18
November ..	1.57	3.18	3.04	1.17	4.98	2.49	6.41	2.92	2.44	1.88
December ..	3.12	2.18	4.00	2.61	1.89	2.39	0.14	3.93	1.96	3.55
Totals ..	26.92	32.73	33.01	21.10	28.18	25.89	27.02	32.34	34.84	25.73

	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903.
January ..	1.87	2.06	1.13	1.11	2.05	3.84	4.29	2.13	0.36	<b>2.36</b>
February ..	4.02	0.04*	1.54	2.35	1.91	1.82	2.65	1.08	1.51	<b>1.97</b>
March ..	2.21	0.89	2.94	2.09	0.73	2.34	*	1.56	2.03	<b>2.11</b>
April ..	1.59	1.74	1.48	2.27	1.40	3.27	1.53	2.14	1.96	<b>1.86</b>
May ..	2.48	0.54	0.51	1.33	3.88	3.28	1.36	0.78	3.82	<b>3.21</b>
June ..	2.23	0.82	3.83	3.52	2.87	2.03	2.36	1.72	1.49	<b>1.79</b>
July ..	3.66	3.72	1.92	1.15	0.52	2.37	0.93	1.40	1.75	<b>4.16</b>
August ..	4.77	3.31	3.18	4.88	4.54	1.49	5.67	2.78	2.51	<b>4.43</b>
September ..	0.72	1.17	6.28	4.90	1.28	4.17	0.83	0.95	1.18	<b>4.68</b>
October ..	3.79	5.13	3.18	1.88	4.55	3.03	3.66	3.68	3.39	<b>7.70</b>
November ..	2.56	2.65	1.31	4.61	2.42	0.56	3.31	3.42	1.95	<b>3.60</b>
December ..	3.44	2.88	4.56	3.99	2.84	1.89	2.96	3.86	2.26	<b>1.47</b>
Totals ..	33.34	25.35	31.86	34.08	28.99	30.09	29.55	25.50	24.21	<b>39.34</b>

\* Rain Gauge out of order.



**APPENDIX A.**

Showing the work done during 1903 in the erection of Buildings and the Paving and Sewering of Streets and Passages.

This information is supplied by

MR. GEO. J. C. BROOM, M.I.C.E.,

Borough Engineer.

**Plans Deposited and Approved by the Health Committee.**

	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903
For Dwelling-houses	563	310	253	310	329	386	284	293	370	677	<b>626</b>
„ Other Buildings	35	45	24	31	26	22	23	21	12	23	<b>34</b>
„ Alterations to Existing Buildings }	59	73	48	44	40	46	47	52	81	27	<b>128</b>
Total.....	477	657	438	325	385	395	454	354	366	727	<b>788</b>

The following Table shows the several Wards of the Borough in which Buildings have been erected during the years mentioned :—

Year.	Eccleston North	Eccleston South	Windle North	Windle South	Sutton, East	Sutton, West	Central	Hardshaw	Parr	Total
1896	15	63	57	12	6	36	—	12	43	244
1897	16	28	65	5	15	15	—	7	44	195
1898	40	28	99	14	40	15	—	48	40	324
1899	19	6	42	7	42	11	2	27	80	236
1900	38	56	28	11	16	9	—	21	85	264
1901	26	77	27	1	27	35	8	60	54	315
1902	20	53	14	1	72	11	5	29	54	259
<b>1903</b>	<b>76</b>	<b>48</b>	<b>37</b>	<b>18</b>	<b>100</b>	<b>23</b>	<b>8</b>	<b>43</b>	<b>38</b>	<b>391</b>



**STREETS.****Sewering.**

Proposed Street off Croppers Hill.

**Sewering, Levelling, Paving, Flagging, Channelling, and Completing.**

Horace-street, from Boundary-road to Virgil-street.  
Virgil-street, from Horace-street to Hanover-street.  
Elliott-street.

**PASSAGES.****Draining, Levelling, Paving, Channelling, and Completing.**

Passage rear Nos. 3-13 Pemberton-street, Nos. 52-66 Borough-road, and Nos. 2-12 Duncan-street.  
,, ,, Nos. 1-19 Duncan-street, Nos. 40-50 Borough-road, and Nos. 35-41 Crispin-street.  
,, ,, Nos. 9-29 and along gable of No. 29 Carlton-street.  
,, from Sandfield-crescent to St. James-street.  
,, between Brynn-street and Hardshaw-street, from Cansfield-street to Standish-street.  
,, rear of Nos. 152-162 College-street.  
,, ,, Nos. 92-114 Peasley Cross-lane.  
,, ,, Nos. 68-72 North-road, and along gable of 43 Cooper-street.  
,, between Nos. 42-44 Harris-street.

**Sewering, Levelling, Paving, Channelling, and Completing.**

Passage rear of Nos. 1-113, Eldon-street.  
,, ,, Nos. 6-36 Croppers Hill.  
,, ,, St. Paul-street, Napier-street, Chester-street, and St. Paul's Church.  
,, ,, Nos. 10-34 Williamson-street.  
,, ,, Hanover-street, Horace-street, and Boundary-road.  
,, between Ross-street and Johnson-street.  
,, rear of Nos. 156-160 Duke-street, and Nos. 17-25 Chorley-street.  
,, ,, Nos. 4-26 Nutgrove-road, and Nos. 3-15 Scholes-lane.  
,, ,, Nos. 37-53 Crab-street.  
,, ,, Nos. 20-26 Cowley Hill-lane, Nos. 58-62 Cooper-street, and Nos. 63-69 Atherton-street.  
,, ,, Nos. 70-98 Friar-street, and Nos. 23-35 Seddon-street.

**Draining, Levelling, Flagging, Channelling, and Completing.**

Passage rear of No. 10 Eccleston-street.  
,, between Nos. 3 and 5 Greenough-street, and rear of No. 2 Manor-street.

**Sewering, Levelling, Flagging, Channelling, and completing.**

Passage rear of Nos. 165-175, Westfield-street, and along gable of No. 13, Crook-street  
,, ,, Westfield-st. and Edward-st., and along gable of No. 4, Edward-st.  
,, between Westfield-st. and Gilbert-st., and rear of Nos. 40-46 St. Thomas'-st.  
,, rear of Nos. 72-108 Liverpool-road, and along gable of No. 3, Edward-street.  
,, ,, Pocket Nook-street and Barber-street.

**SEWERING.**

Passage rear of Wilson-street, Havelock-street, Chester-street, and Campbell-street.  
,, ,, Havelock-street, Lyon-street, Chester-street, and Campbell-street.  
,, ,, Lyon-street, Raglan-street, Chester-street, and Campbell-street.

**PUBLIC HIGHWAYS.****Paving.**

Bridge-street.  
Exchange-street.  
Cross-street.  
Bickerstaffe-street.  
Victoria-square.

**STREETS DECLARED PUBLIC HIGHWAYS.**

Borough-road, from Crispin-street to Prescott-road.  
 Keswick-road, from Bishop-road to Cowley Hill-lane.  
 Canterbury-street, from Dentons Green-lane to Keswick-road.  
 Brynn-street, from Clifton-street to Standish-street.  
 Hardshaw-street, from a point 164 feet north of Tolver-street to Standish-street.  
 Oxley-street, from Waterdale-crescent to Robins-lane.  
 Garnet-street, „ „ „ „ „ „  
 Charnwood-street, from L. & N.-W. Ry. Fence to Epsom-street.  
 Hargreaves-street, „ Broad Oak-road to Charnwood-street.  
 Bramwell-street. „ „ „ „ „ „  
 Epsom-street, „ „ „ „ „ „  
 Thompson-street, „ Owen-street to Roby-street.  
 Carlow-street, „ Thompson-street to West-street.

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TABLE I.

TABLE SHOWING CERTAIN MORTALITY STATISTICS IN THE COUNTY  
BOROUGH OF ST. HELENS FOR THE YEARS 1893—1903.

Year.	Population estimated to Middle of each year.	BIRTHS.		DEATHS UNDER ONE YEAR OF AGE.		DEATHS AT ALL AGES.  TOTAL.		Deaths in Public Institutions.	Deaths of Non-Residents registered in District.	Deaths of Residents regis- tered beyond District.	DEATHS AT ALL AGES.  NETT.	
		Number.	Rate.*	Number.	Rate per 1000 Births registered.	Number.	Rate.*				Number.	Rate.*
1893 ..	75390	3029	40·1	577	196	1769	23·4	161	54	78	1793	23·7
1894 ..	77690	2882	37·0	466	161	1400	18·0	159	77	78	1401	18·0
1895 ..	79490	3165	39·8	576	181	1674	21·0	195	88	105	1691	21·2
1896 ..	81136	3042	37·4	542	177	1668	20·4	194	110	85	1643	20·2
1897 ..	82910	3193	38·5	578	181	1746	21·0	189	102	99	1743	21·0
1898 ..	84730	3262	38·4	566	172	1641	19·3	198	119	93	1615	19·0
1899 ..	86588	3115	35·9	492	157	1700	19·6	217	125	107	1682	19·4
1890 ..	88480	3100	35·0	584	188	1914	21·6	233	119	111	1906	21·5
1901 ..	84734	3128	36·9	550	175	1675	19·7	209	96	132	1711	20·1
1902 ..	86040	3222	37·4	541	167	1702	19·7	243	109	118	1711	19·8
Averages for years 1893-1902 }	82718	3113	37·6	547	175	1688	20·3	199	99	100	1689	20·3
1903	87385	3421	39·14	475	138	1535	17·5	209	96	129	1568	17·9

\* Rates calculated per 1000 of estimated population.

Area of District in acres (exclusive of area covered by Water) .. 7284·427 Acres.

Total population at all ages	..	..	..	..	..	..	84,410
Number of inhabited houses	..	..	..	..	..	..	15,122
Average number of persons per house	..	..	..	..	..	..	5·58

At Census of 1901.



**TABLE II.**

TABLE SHOWING CERTAIN MORTALITY STATISTICS, CLASSIFIED ACCORDING TO WARDS, IN THE COUNTY BOROUGH OF ST. HELENS FOR THE YEARS

NAMES OF LOCALITIES.	NORTH ECCLESTON.			SOUTH ECCLESTON.			CENTRAL.			NORTH WINDLE.			SOUTH WINDLE.		
	Population esti- mated to middle of each Year.	Deaths at all Ages.	Deaths under 1 Year.	Population esti- mated to middle of each Year.	Deaths at all Ages.	Deaths under 1 Year.	Population esti- mated to middle of each Year.	Deaths at all Ages.	Deaths under 1 Year.	Population esti- mated to middle of each Year.	Deaths at all Ages.	Deaths under 1 Year.	Population esti- mated to middle of each Year.	Deaths at all Ages.	Deaths under 1 Year.
1893	8937	219	93	7104	120	39	8278	203	69	6733	133	39	8551	177	69
1894	9286	165	74	7325	108	42	8321	125	50	8333	122	51	8580	134	53
1895	9472	210	90	7739	114	44	8321	160	53	8747	161	64	8614	142	55
1896	9579	187	88	8187	119	47	8321	170	50	9152	173	55	8699	161	57
1897	9788	202	75	8366	140	53	8503	179	54	9352	180	58	8889	167	71
1898	10003	218	95	8549	107	36	8690	138	48	9558	166	63	9084	140	51
1899	10222	184	66	8736	128	45	8880	157	48	9768	147	39	9283	153	50
1900	10453	227	91	8926	136	40	9073	179	56	9980	181	69	9484	170	61
1901	10007	221	94	7958	150	64	9616	139	41	8755	161	56	9872	182	69
1902	10840	209	87	9256	139	46	7130	144	57	11810	168	50	8310	146	53
Averages of Years 1893 to 1902.	9858	204	85	8214	126	45	8513	159	52	9218	157	54	8936	157	58
1903	11009	183	65	9400	143	50	7240	127	43	12002	145	51	8439	119	40

TABLE II.—CONTINUED.

TABLE SHOWING CERTAIN MORTALITY STATISTICS—CONTINUED.

NAMES OF LOCALITIES.	HARDSHAW.			SUTTON EAST.			SUTTON WEST.			PARR.			WHOLE BOROUGH.		
	Population esti- mated to middle of each Year.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each Year.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each Year.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each Year.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each year.	Deaths at all Ages.	Deaths under 1 year.
YEAR.															
1893	9729	302	74	8120	164	48	8788	255	69	8600	196	77	74840	1769	577
1894	9834	238	60	8981	132	35	8270	232	42	8760	144	59	77690	1400	466
1895	9970	219	68	9031	157	43	8542	311	70	8964	200	89	79400	1674	576
1896	10056	209	59	9074	154	38	8797	280	60	9270	215	88	81135	1668	542
1897	10276	231	70	9272	157	42	8989	304	71	9475	186	84	82910	1716	578
1898	10502	230	70	9475	147	51	9186	296	63	9683	199	89	84730	1641	566
1899	10732	218	56	9683	173	51	9388	309	66	9896	231	71	86588	1700	492
1900	10966	231	63	9893	176	45	9593	338	64	10112	256	95	88480	1914	584
1901	10796	191	54	9652	153	41	8682	284	54	9396	194	77	84734	1675	550
1902	9750	198	63	8838	171	54	9826	314	51	10280	213	80	86040	1702	541
Averages of Years 1893 to 1902. ...	10261	226	63	9201	158	44	9006	292	61	9443	203	80	82654	1688	547
1903	9901	210	65	8975	178	41	9979	235	46	10440	195	74	87385	1536	475

TABLE III.

TABLE SHOWING NEW CASES OF INFECTIOUS SICKNESS, COMING TO THE KNOWLEDGE OF THE MEDICAL OFFICER OF HEALTH DURING THE YEAR 1903, IN THE ST. HELENS URBAN SANITARY DISTRICT, CLASSIFIED ACCORDING TO DISEASES, AGES, AND LOCALITIES.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.						TOTAL CASES NOTIFIED IN EACH LOCALITY.									No. OF CASES REMOVED TO HOSPITAL FROM EACH LOCALITY.								
	At Ages.—Years.						North Ecleston.	South Ecleston.	Central.	North Windle.	South Windle.	Hardshaw.	East Sutton.	West Sutton.	Parr.	North Ecleston.	South Ecleston.	Central.	North Windle.	South Windle.	Hardshaw.	East Sutton.	West Sutton.	Parr.
	Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 65.	65 and upwards.																		
Small-pox ..	1	1	3	4	18	..	9	3	5	1	..	6	2	1	..	9	3	5	1	..	6	2	1	..
Cholera ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diphtheria ..	6	37	64	13	6	..	13	9	4	28	15	27	12	7	11	..	..	..	..	2	..	..	1	..
Membranous Croup }	126	37	64	13	6	..	13	9	4	28	15	27	12	7	11	..	..	..	..	2	..	..	1	..
Erysipelas ..																								
Scarlet Fever..	10	265	395	39	19	..	92	46	21	143	44	90	156	28	108	59	28	15	80	22	62	114	18	78
Typhus Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Enteric Fever	..	4	19	22	31	..	20	6	1	8	5	7	7	10	12	16	4	..	6	4	5	6	10	11
Relapsing Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Continued Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Fever	6	..	..	3	3	..	..	..	1	1	..	2	1	..	1	..	..	..	..	..	..	..	..	..
Plague ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals ..	1024	310	484	86	117	9	144	65	35	186	74	135	188	58	139	84	35	20	87	28	74	122	31	89



TABLE IV.

CAUSES OF, AND AGES AT, DEATH DURING YEAR 1903.

CAUSES OF DEATH.	DEATHS IN WHOLE DISTRICT AT SUBJOINED AGES.							DEATHS IN LOCALITIES (AT ALL AGES).									
	All Ages.	Under 1.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	North Eceleston.	South Eceleston.	Central.	North Windle.	South Windle.	Hardshaw.	East Sutton.	West Sutton.	Par.	Deaths in Public Institutions.
Small-pox	1	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..
Measles	26	2	18	5	1	..	..	..	..	..	1	..	1	1	18	1	..
Scarlet Fever	30	17	13	..	..	..	..	9	1	1	..	..	5	6	4	4	20
Whooping Cough	23	5	10	8	..	..	..	4	2	1	2	5	4	..	3	2	1
Diphtheria and membranous croup	1	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Croup	1	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Typhus	18	..	3	3	4	8	..	..	..	..	1	1	..	..	15	1	14
Fever { Enteric	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other Continued	10	..	..	..	1	5	4	2	3	1	..	2	..	..	1	1	..
Epidemic Influenza	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cholera	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Plague	53	35	12	..	1	3	2	7	4	2	8	4	3	2	6	8	2
Diarrhoea	31	18	9	1	..	2	1	5	4	..	3	3	..	..	5	4	1
Enteritis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Erysipelas	5	..	2	..	1	2	..	..	1	1	..	..	1	1	1	..	1
Other septic diseases	127	5	11	14	18	79	..	11	5	15	10	8	17	11	30	20	30
Phthisis	44	18	21	3	..	2	..	4	3	6	7	3	3	7	7	4	2
Other Tubercular Diseases	37	1	..	5	..	29	7	4	4	2	5	5	5	8	3	1	7
Cancer, Malignant Disease	189	57	24	..	2	50	51	23	27	27	18	9	23	25	13	4	4
Bronchitis	149	39	45	8	8	41	8	14	8	6	14	13	28	28	21	17	18
Pneumonia	5	..	..	..	..	3	2	..	..	..	..	..	1	1	2	1	4
Pleurisy	20	6	2	4	1	5	2	3	2	2	4	1	1	2	3	2	2
Other Diseases of Respiratory Organs	19	1	..	1	..	17	..	1	1	2	..	1	4	5	2	3	2
Alcoholism, Cirrhosis of Liver	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Veneral Diseases	70	70	..	..	..	..	..	11	3	6	6	6	11	8	7	12	..
Premature Birth	15	2	..	..	1	12	..	2	3	1	2	1	..	3	1	2	1
Diseases and Accidents of Parturition	84	3	3	10	3	46	19	9	10	3	9	7	13	9	12	12	12
Heart Diseases	59	4	8	11	4	28	4	2	1	3	3	2	19	16	7	6	25
Accidents	9	..	56	19	11	7	1	69	..	41	52	2	..	2	2	3	1
Suicides	..	191	..	..	..	149	84	..	56	..	..	46	67	41	71	67	62
All other causes	510	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
All causes	1535	475	238	92	57	488	185	183	143	127	145	119	210	178	235	195	209



# TABLE A.—Deaths Registered in the St. Helens Urban Sanit

CAUSE OF DEATH.	WEEKS.													Total for 1st Quarter.	WEEKS.												
	1	2	3	4	5	6	7	8	9	10	11	12	13		14	15	16	17	18	19	20	21	22	23			
Small Pox .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Measles .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Scarlet Fever .. ..	..	..	3	2	1	..	2	..	..	2	..	1	..	2	13	1	1	..	..	1	1	2	..	..	..		
Typhus Fever .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Whooping Cough ..	..	..	..	..	..	1	1	1	..	..	..	1	2	..	6	1	..	2	1	..	..	1	2	2	..		
Diphtheria .. .. .	..	..	1	..	1	1	1	..	..	1	..	..	..	..	5	1	..	1	..	1	1	..	1	..	..		
Simple or Continued Fever..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Enteric Fever .. ..	..	1	..	1	..	1	..	..	..	..	..	..	..	..	3	..	..	..	1	..	..	..	..	..	..		
Influenza .. .. .	..	..	..	1	..	1	..	..	..	..	..	..	1	..	3	..	1	..	1	1	1	1	..	..	..		
Other Zymotics .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Simple Cholera .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Diarrhœa .. .. .	..	..	1	..	..	..	..	..	..	..	1	..	..	..	2	..	..	1	..	1	..	..	1	..	..		
Dysentery .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Remittent Fever and Ague..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Hydrophobia, Anthrax, &c..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Syphilis, &c. .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Erysipelas .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Pyæmia, &c. .. ..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	1	..	..	..	..		
Puerperal Fever .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Thrush, &c. .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Want of Breast Milk ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..		
Scurvy .. .. .	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..		
Chronic Alcoholism ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Rheumatic Fever .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..		
Gout .. .. .	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..		
Ricketts .. .. .	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..		
Cancer, &c. .. .. .	..	1	1	1	..	..	1	2	..	..	2	..	..	1	9	2	1	1	..	1	2	1	..	..	..		
Tabes Mesenterica .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	1	..	..	..		
Tubercular Meningitis ..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	1	..	..	..	..	..	..	1	..	..	..		
Hydrocephalus .. ..	..	..	1	..	1	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..		
Phthisis .. .. .	..	3	1	1	4	5	7	2	1	1	2	4	5	1	37	3	4	3	2	2	..	2	3	1	2		
Scrophula .. .. .	..	..	1	..	..	..	..	..	..	..	..	1	..	..	2	..	..	..	..	..	..	1	..	..	..		
Anæmia, Diabetes, &c. ..	..	4	..	..	..	..	..	..	..	..	..	1	..	..	5	..	..	..	2	..	..	..	..	1	..		
Premature Birth, &c. ..	..	1	..	3	2	2	1	..	1	2	2	..	3	..	17	2	2	1	1	1	5	3	3	1	4		
Old Age .. .. .	..	2	1	1	..	..	..	1	1	1	1	..	2	2	12	1	1	3	1	..	1	2	1	1	..		
Diseases of Nervous System.	..	6	2	4	3	3	1	3	3	2	2	4	2	..	35	..	2	4	3	5	..	..	..	1	2		
Convulsions .. .. .	..	..	3	1	1	3	1	2	2	1	2	..	2	1	19	3	1	1	3	3	3	1	..	1	1		
Eye, Ear, and Nose .. ..	..	..	..	..	..	1	..	..	..	..	..	2	..	..	3	..	..	..	..	..	..	..	..	..	..		
Laryngitis, Croup, &c. ..	..	1	..	..	1	1	..	1	2	..	..	..	1	..	7	..	..	..	1	3	1	1	..	1	..		
Bronchitis .. .. .	..	4	3	6	8	3	3	2	3	4	2	2	4	2	46	2	4	4	..	6	1	6	2	5	1		
Pneumonia .. .. .	..	3	3	2	2	2	1	4	2	1	2	4	4	6	36	3	..	5	4	6	1	2	2	3	1		
Pleurisy .. .. .	..	..	..	1	..	..	1	..	..	..	..	..	1	..	3	..	..	..	..	..	..	..	..	..	..		
Heart and Blood Vessels ..	..	1	2	1	2	..	3	4	3	2	3	2	2	1	26	1	1	4	2	2	2	1	1	..	1		
Dentition .. .. .	..	..	..	1	..	..	..	..	..	1	..	..	1	2	5	..	..	..	..	..	1	..	..	..	..		
Diseases of Digestive System	..	1	2	..	..	2	1	1	1	..	2	..	6	2	18	4	2	..	2	1	3	2	1	1	1		
Lymphatics and other Glands	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..		
Urinary System .. ..	..	1	1	4	..	1	1	..	..	..	1	..	1	1	11	1	2	..	..	..	1	1	..	..	1		
Generative Organs .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Abortion or Childbirth ..	..	..	2	3	..	1	..	..	..	..	2	..	..	..	8	1	..	..	1	..	..	..	..	..	..		
Diseases of Bones .. ..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	2	..	..	..	..	1	..	..	..	..	..		
Diseases of Skin .. ..	..	..	..	..	..	..																					



District, in weeks, during the year ending January. 2nd. 1904.

Total for 2nd Quarter.	WEEKS.													Total for 3rd Quarter.	WEEKS.													Total for 4th Quarter.	Total for YEAR.	
	27	28	29	30	31	32	33	34	35	36	37	38	39		40	41	42	43	44	45	46	47	48	49	50	51	52			53
..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
6	..	1	..	..	..	..	..	1	..	..	..	1	..	3	..	..	..	1	..	..	1	..	1	..	..	..	1	..	..	
12	..	1	..	1	..	..	..	1	1	..	1	..	..	5	..	1	1	1	..	..	..	..	1	..	..	2	..	7	30	
8	..	..	1	1	..	1	..	..	..	..	..	1	..	4	..	..	1	1	1	..	..	2	..	..	1	..	..	6	23	
2	..	..	..	1	..	1	..	..	..	1	..	1	..	4	1	2	..	1	..	1	..	1	1	..	1	..	1	9	18	
5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	1	..	..	..	..	..	2	10	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
3	..	..	..	..	4	5	6	2	5	1	5	7	3	38	3	1	2	..	1	1	1	..	..	..	..	..	1	10	53	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
2	..	..	1	..	..	..	..	1	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
1	..	..	..	..	..	..	..	..	..	..	1	1	..	2	..	..	..	1	..	..	..	..	..	..	..	..	..	1	4	
..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	..	..	..	..	..	..	..	2	..	..	..	1	..	3	1	
2	..	..	..	..	..	..	..	..	..	..	1	..	1	2	..	1	..	1	..	..	..	..	1	..	..	..	d	3	5	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	
11	..	2	..	2	1	1	1	1	..	..	..	1	1	10	..	1	..	1	..	..	..	..	2	2	..	1	..	7	37	
5	..	1	1	..	1	1	2	2	1	..	1	1	1	12	..	..	1	..	1	..	2	..	..	..	1	..	1	6	23	
3	1	1	..	..	1	..	..	..	..	..	..	..	..	3	2	..	..	..	..	..	..	..	..	..	..	..	..	2	9	
24	3	4	2	5	..	3	2	3	3	1	5	4	3	38	5	4	1	1	2	1	..	3	2	..	3	2	1	3	28	127
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	..	1	..	..	..	..	..	..	..	4	7	
3	..	..	..	..	..	1	..	..	..	..	1	..	..	2	..	..	1	..	1	1	..	..	..	..	..	1	..	4	14	
29	2	..	..	..	1	1	..	2	1	1	1	3	1	13	1	..	3	1	2	2	..	1	3	..	3	..	2	1	19	78
12	6	..	..	1	..	1	..	2	..	..	..	..	..	10	1	..	2	..	1	1	2	..	1	1	4	..	..	13	47	
26	2	2	4	3	1	1	3	..	5	6	1	4	6	38	2	2	4	2	5	..	3	4	..	3	3	2	1	3	34	133
25	1	3	1	2	2	..	2	..	1	1	1	1	..	15	2	..	1	1	2	2	2	..	2	1	3	..	1	2	19	78
1	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	5	
7	..	..	..	..	..	..	..	..	1	1	..	..	..	2	..	..	1	..	..	..	1	..	..	..	2	1	..	5	21	
38	6	3	2	1	1	2	2	1	4	5	3	3	5	38	2	3	1	1	4	5	8	10	7	4	10	4	5	3	67	189
32	3	5	..	3	..	3	..	1	1	..	2	5	3	26	..	5	1	4	5	2	8	4	3	5	8	7	..	3	55	149
..	..	2	2	1	..	2	2	1	..	..	2	..	1	1	..	..	1	..	..	..	..	..	..	..	..	..	..	1	5	
20	2	2	1	..	..	2	2	1	..	..	2	..	1	13	3	2	2	6	..	1	3	2	1	1	1	2	2	4	30	89
2	1	..	..	1	1	..	1	..	..	1	..	..	..	5	..	..	1	..	..	..	..	..	..	1	..	..	..	2	14	
20	3	1	1	3	..	2	6	..	2	4	6	5	1	34	2	2	3	1	1	1	..	5	1	4	1	2	2	2	27	99
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	
9	..	1	1	1	1	2	1	1	..	..	..	..	1	7	1	1	..	1	..	1	2	2	..	1	..	..	..	9	38	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	
3	..	3	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	1	..	..	..	..	..	1	15	
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	2	..	..	..	3	6	
11	..	2	1	4	..	1	2	..	..	3	1	1	..	15	1	1	1	..	1	..	2	3	1	2	..	4	3	19	59	
..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	1	1	..	..	..	..	..	..	..	3	9	
5	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	3	
13	..	1	..	..	2	1	3	2	2	..	2	2	1	16	3	3	..	2	..	..	..	1	..	2	2	2	3	18	57	
5	..	..	1	..	1	1	..	..	2	..	..	..	..	5	..	1	..	1	4	2	..	1	1	..	..	..	..	10	24	
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	1	
..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	
..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	
198	17	16	11	12	9	16	15	13	10	16	14	19	17	185	18	13	13	17	21	17	15	23	17	14	25	18	13	21	245	830
151	13	17	6	19	6	13	20	11	17	11	21	25	11	190	13	17	11	8	16	5	19	18	15	15	15	14	12			

Table B.

MORTALITY STATISTICS for Year ending January 2nd, 1904, showing Age at Death, and Ward.

DISEASES.	AGES AT DEATH.																	WARDS.											
	0 to 3 ms	3 to 6 ms	6 to 12 ms	1 to 2 yrs	2 to 3 yrs	3 to 4 yrs	4 to 5 yrs	5 to 10 yrs	10 to 15 yrs	15 to 20 yrs	20 to 25 yrs	25 to 35 yrs	35 to 45 yrs	45 to 55 yrs	55 to 65 yrs	65 to 75 yrs	75 to 85 yrs	Upward of 85 years.	Ecceleston North	Ecceleston South	Central	Windle North	Windle South	Hardshaw	Sutton East	Sutton West	Parr	Whole Borough	
<b>Zymotic Diseases</b>																													
(a) MIASMATIC DISEASES																													
Small Pox ..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Measles ..	..	..	..	..	..	..	3	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Scarlet Fever ..	..	1	1	2	6	7	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Typhus Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Whooping Cough ..	3	3	11	8	3	2	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diphtheria ..	..	1	4	1	3	3	3	7	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Simple, Continued, or Ill-Defined Fever	..	..	..	..	..	..	..	..	..	3	1	6	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Enteric Fever ..	..	..	..	1	2	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Influenza ..	..	..	..	..	..	..	..	1	..	..	..	1	2	..	2	3	1	..	..	3	1	1	..	..	..	..	1	1	..
Other Miasmatic Diseases	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(b) DIARRHOICAL DISEASES																													
Simple Cholera ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhoea ..	..	..	..	..	..	..	1	..	..	1	..	..	..	3	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Dysentery ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(c) MALARIAL DISEASES																													
Remittent Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ague ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(d) ZOOGENOUS DISEASES																													
Cow Pox and Effects of Vaccination ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hydrophobia, Glanders, & Splenic Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	28

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
(c) VENEREAL DISEASES																												
Syphilis .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gonorrhea and Stricture, &c. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(f) SEPTIC DISEASES																												
Erysipelas .. ..	..	..	..	1	1	..	..	..	..	1	..	1	..	..	1	..	..	..	..	1	1	..	..	1	1	..	..	5
Pyæmic and Septicæmia .. ..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	1	..	..	..	..	..	..	..	..	1	1	..	..	5
Puerperal Fever .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Parasitic Diseases																												
Thrush and other Vegetable Parasites...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Worms, Hydatids, & Animal Parasites...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dietic Diseases																												
Want of Breast Milk .. ..	..	2	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	1	..	1	4
Scurvy .. ..	..	..	..	1	..	..	..	..	..	..	..	2	..	2	1	..	..	..	..	..	1	..	..	1	1	..	1	1
Chronic Alcoholism .. ..	..	..	..	..	..	..	..	..	..	..	..	2	..	2	1	..	..	..	..	..	1	..	..	2	..	..	1	5
Delirium Tremens .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Constitutional Diseases																												
Rheumatic Fever & Rheumatism of Heart	..	..	..	..	..	..	1	1	..	..	2	2	..	..	..	..	..	..	..	..	1	1	..	1	1	..	1	3
Rheumatism .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	1	..	..	..	1	1	..	1	1	..	1	4
Gout .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1
Rickets .. ..	..	..	1	1	..	..	..	..	..	..	..	..	6	7	16	2	5	..	4	2	2	..	5	5	1	1	..	2
Cancer and Malignant Diseases..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	2	1	1	37
Tabes Mesenterica .. ..	4	6	1	7	1	2	1	..	..	..	..	..	1	1	..	..	..	..	2	4	6	5	1	..	2	2	23	23
Tubercular Meningitis .. ..	..	1	1	3	1	2	..	1	..	..	..	..	..	..	..	..	..	..	2	1	..	..	1	1	3	1	9	5
Hydrocephalus .. ..	2	..	..	2	1	..	..	5	9	8	10	26	31	17	5	..	..	..	11	5	15	10	8	17	11	2	1	127
Phthisis .. ..	..	1	4	9	..	..	2	5	2	..	..	1	..	..	..	..	..	..	..	1	..	2	1	1	..	1	20	7
Scrofula and other Tubercular Diseases	..	..	3	1	..	..	..	2	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	1	..	1	1	7
Purpura .. ..	..	..	..	..	..	..	..	..	..	..	2	..	1	..	..	..	..	..	1	1	..	..	..	..	..	..	2	6
Anæmia, Chlorosis .. ..	1	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	1	1	..	..	1	1	..	..	7	7
Diabetes .. ..	..	..	..	..	..	..	..	..	1	1	..	1	..	2	1	2	..	..	..	..	..	4	1	..	..	..	..	1
Other Constitutional Diseases ..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1



DISEASES.	AGES AT DEATH.																	WARDS.										
																		Eccleston North	Eccleston South	Central	Windle North	Windle South	Hardshaw	Sutton East	Sutton West	Pairr	Whole Borough	
	0 to 3 ms	3 to 6 ms	6 to 12 ms	1 to 2 yrs	2 to 3 yrs	3 to 4 yrs	4 to 5 yrs	5 to 10 yrs	10 to 15 yrs	15 to 20 yrs	20 to 25 yrs	25 to 35 yrs	35 to 45 yrs	45 to 55 yrs	55 to 65 yrs	65 to 75 yrs	75 to 85 yrs											Upward of 85 years.
<b>Developmental Diseases</b>																												
Premature Birth .. ..	70	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11	3	6	6	6	11	8	7	12	70	
Congenital Malformation ..	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	5	2	1	2	1	8	
Old Age .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	16	23	7	7	5	9	8	2	2	6	3	47	
<b>Local Diseases</b>																												
<i>(a)</i> NERVOUS SYSTEM																												
1. Inflammation of Brain or Membranes ..	..	1	5	3	2	2	4	2	2	1	..	..	..	4	2	9	4	..	7	..	..	5	4	8	..	3	29	
2. Apoplexy, Softening of Brain ..	..	..	..	..	..	..	..	..	1	1	..	1	5	13	26	1	..	11	3	4	5	7	7	6	13	4	60	
3. Insanity .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	5	1	..	1	1	..	..	..	1	..	21	1	24	
4. Epilepsy .. ..	..	1	..	..	..	..	..	..	2	..	..	1	..	..	..	..	..	1	1	..	..	..	1	..	..	1	4	
5. Convulsions .. ..	40	15	7	6	4	3	1	2	..	..	..	..	..	..	..	..	..	13	7	5	4	8	5	5	5	25	78	
6. Laryngismus St. .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
7. Diseases of Spinal Chord, P. A. and Paraplegia .. ..	..	..	..	1	..	..	..	..	..	..	..	..	1	3	2	..	..	..	2	2	1	..	2	3	..	..	6	
8. Other Diseases of Nervous System ..	..	..	..	..	..	..	..	..	..	..	..	..	3	2	2	2	..	2	3	2	..	..	..	..	..	..	10	
<i>(b)</i> DISEASES OF SPECIAL SENSE																												
Eye, Ear, and Nose .. ..	..	..	1	..	1	..	..	2	..	1	..	..	..	..	..	..	..	..	1	..	1	1	..	..	..	1	5	
<i>(c)</i> DISEASES OF RESPIRATORY SYSTEM																												
Laryngitis .. ..	..	1	2	..	2	..	..	3	..	1	..	..	..	..	..	..	..	2	1	2	1	1	..	1	..	1	9	
Croup .. ..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	1	
Emphysema and Asthma .. ..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	2	2	..	..	1	..	..	3	
Bronchitis .. ..	17	15	25	18	4	1	1	4	1	2	..	1	4	21	24	35	14	2	27	27	18	9	23	25	13	24	189	
Pneumonia .. ..	9	9	21	29	8	6	2	6	2	3	5	10	9	12	10	6	2	14	8	6	14	13	28	28	21	17	149	
Pleurisy .. ..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	1	2	..	..	..	..	..	..	1	1	2	1	5	
Other Respiratory Diseases ..	2	1	..	..	..	..	..	1	..	..	..	..	2	..	2	1	..	1	1	..	1	1	..	..	3	1	8	
	I	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28

	I	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
(d) DISEASES OF CIRCULATORY SYSTEM																												
Pericarditis .. ..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
Endocarditis acute ..	..	..	..	1	..	..	..	6	2	..	1	6	11	13	15	2	2	..	9	10	3	8	6	11	8	11	9	75
Valvular Diseases of Heart ..	..	..	..	..	1	1	..	1	1	..	..	1	..	3	2	..	..	..	..	..	..	1	1	2	1	1	3	9
Other Diseases of Heart ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Aneurism .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Embolism or Thrombosis ..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	2	..	..	1	..	..	..	1	..	..	..	..	..
Other Diseases of Blood Vessels ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	1	4
(e) DISEASES OF DIGESTIVE SYSTEM																												
Dentition .. ..	..	1	6	6	..	..	..	1	1	..	..	..	..	..	..	..	1	1	1	2	3	1	1	1	2	1	..	14
Sore Throat, Quinsey ..	..	..	..	1	..	1	..	1	1	..	..	..	..	..	..	..	1	2	2	5	4	..	..	..	..	..	2	4
Diseases of Stomach ..	..	4	5	4	..	..	..	1	..	..	..	2	2	1	1	1	1	3	3	4	2	1	2	3	2	5	4	25
Enteritis .. ..	5	9	4	7	2	..	..	1	..	..	..	1	..	..	3	4	1	5	5	4	1	2	2	3	2	5	4	31
Obstruction Diseases of Intestines ..	1	..	..	..	..	..	..	2	1	..	1	..	1	1	..	..	..	1	1	1	..	1	1	1	2	2	1	12
Peritonitis .. ..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	2	1	..	2	2	1	8
Ascites .. ..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cirrhoses of Liver ..	..	..	1	..	..	..	..	..	1	..	..	3	4	5	..	..	..	..	1	..	1	..	1	2	5	2	2	14
Jaundice & other Diseases of Liver ..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	1	1	..	..	..
Other Diseases of Digestive System ..	..	..	..	..	..	..	..	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	..	3
(f) DISEASES OF LYMPHATIC SYSTEM																												
Lymphatics, &c. .. ..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
(g) DISEASES OF OTHER GLANDS.																												
Bronchocele .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Addison's Disease .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(h) DISEASES OF URINARY SYSTEM																												
Nephritis .. ..	..	..	..	3	..	1	1	1	..	1	1	2	3	6	6	2	..	..	..	2	..	..	2	7	3	8	4	26
Bright's Diseases, Albuminuria..	..	..	..	1	..	1	..	..	..	..	1	2	2	2	2	..	..	..	1	1	..	1	1	5	1	1	2	7
Diseases of Bladder and Prostate ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	1	..	1	..	..	..	..	2	5
Other Diseases of Urinary System ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

DISEASES.	AGES AT DEATH.																		WARDS.									
	0 to 3 ms	3 to 6 ms	6 to 12 ms	1 to 2 yrs	2 to 3 yrs	3 to 4 yrs	4 to 5 yrs	5 to 10 yrs	10 to 15 yrs	15 to 20 yrs	20 to 25 yrs	25 to 35 yrs	35 to 45 yrs	45 to 55 yrs	55 to 65 yrs	65 to 75 yrs	75 to 85 yrs	Upwards of 85 years.	Ecceleston North	Ecceleston South	Central	Windle North	Windle South	Hardshaw	Sutton East	Sutton West	Parry	Whole Borough
(i) DISEASES OF REPRODUCTION SYSTEM																												
Of Male Organs ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Of Female Organs ..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
Abortion and Miscarriage ..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Puerperal Convulsions ..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	3
Placenta Praevia ..	..	..	..	..	..	..	..	..	..	..	1	6	..	1	..	..	..	..	1	2	1	2	1	..	2	..	1	10
Accidents of Childbirth ..	2	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	1	..	1	2	1	..	2	..	1	1
(k) DISEASES OF BONES AND JOINTS																												
Caries and Necrosis ..	..	..	..	..	..	..	..	1	..	..	..	..	1	1	..	..	..	..	1	..	..	1	..	..	..	..	..	2
Arthritis, Ostitis, Periostitis ..	1	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	1	1	..	..	1	..	..	1	..	..	3
Other Diseases of Bones and Joints ..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1
(l) DISEASES OF INTEGUMENTS																												
Carbuncle, Phlegmon ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	1	1
Other Diseases of Integumentary System	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Deaths from Violence																												
(a) ACCIDENT OR NEGLIGENCE																												
Fractures and Contusions ..	..	..	..	..	..	..	..	1	1	1	2	5	4	7	4	3	..	..	1	1	2	2	1	5	11	3	2	28
Gunshot Wounds ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cuts or Stabs ..	..	..	1	2	4	1	..	5	1	..	..	..	..	..	..	..	1	..	..	..	..	..	1	8	4	..	2	15
Burns or Scalds ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Poison ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	4	2	..	3	2	11
Drowning ..	..	..	..	..	..	1	..	2	..	..	1	1	1	4	1	..	..	..	..	..	..	..	..	4	1	1	..	5
Suffocation (Gassed)	3	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	1	..	..	..	2	1	..	..	..	..
Otherwise ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
<b>(b) HOMICIDE</b>																												
Manslaughter ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Murder ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
<b>(c) SUICIDE</b>																												
Gunshot Wounds ..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Cut, Stab ..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
Poison ..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	1	1	1	2	2
Drowning ..	..	..	..	..	..	..	..	..	..	..	..	1	2	1	..	1	..	..	..	..	..	..	1	..	..	2	5	5
Hanging ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Otherwise ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
<b>Deaths from Ill-Defined and not Specified Causes.</b>																												
Dropsy ..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	1	..	..	1	1	..	3
Debility-Atrophy ..	..	47	3	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11	5	5	5	..	2	5	57
Marasmus ..	..	7	5	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	4	3	5	3	..	..	1	24	24
Mortification ..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1
Tumour ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
Abscess ..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
Haemorrhage ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sudden Death (cause not known)	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
Other causes not specified ..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	1	2
<b>SUMMARY.</b>																												
ZYMOTIC DISEASES ..	11	21	27	24	15	12	8	14	3	6	1	8	3	4	3	4	2	..	25	15	11	12	12	15	10	49	17	166
PARASITIC DO. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
DIETIC DO. ..	..	2	2	1	..	..	..	..	..	..	..	2	..	2	1	..	..	..	..	1	2	..	..	4	1	..	2	10
CONSTITUTIONAL DO. ..	..	7	11	23	3	4	4	10	9	9	12	30	38	31	23	4	6	..	20	15	24	28	17	28	29	43	28	232
DEVELOPMENTAL DO. ..	78	..	..	..	..	..	..	..	..	..	..	..	..	1	..	16	23	7	16	10	12	15	15	11	15	16	125	
LOCAL DO. ..	88	57	80	80	26	15	9	34	11	14	10	45	57	90	111	87	27	3	105	85	61	76	63	116	108	114	116	844
DEATHS FROM VIOLENCE ..	3	..	1	2	5	1	..	8	3	1	4	9	7	13	6	4	1	..	2	1	3	3	4	19	18	9	68	
ILL-DEFINED OR NOT SPECIFIED ..	56	15	8	3	3	..	..	..	..	..	..	1	1	2	..	1	..	..	15	16	14	11	8	13	1	5	7	90
TOTALS ..	243	103	129	133	52	32	21	66	26	30	27	95	106	143	144	116	59	10	183	143	127	145	119	210	178	235	195	1535

